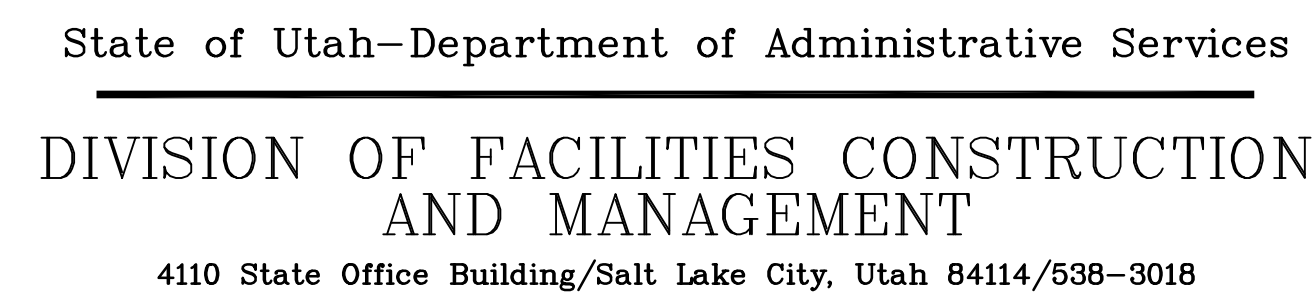


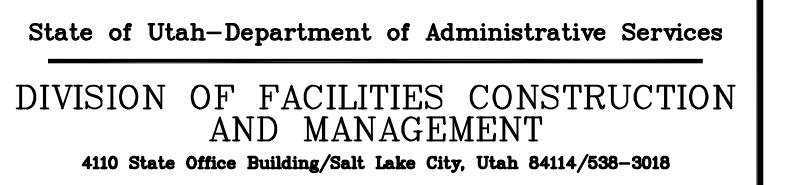
451 EAST 400 NORTH PRICE, UTAH 84501
PROPERTY NO. 02061
DFCM PROJECT NO. 03217610
MAY 2005




APPROVAL DOES NOT RELIEVE A/E OF DESIGN LIABILITY

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G-001	COVER SHEET
G-002	GENERAL ARRANGEMENT PLAN
G-003	SYMBOLS AND ABBREVIATIONS
G-004	GENERAL NOTES
CU-101	DEMOLITION PLAN
CU-102	PAVING AND STRUCTURAL PLAN
C-301	TUNNEL SECTIONS AND DETAILS
C-302	TUNNEL SECTIONS AND DETAILS
C-303	TUNNEL SECTIONS AND DETAILS
M-101	MECHANICAL DEMOLITION PLAN
M-102	NORTH-SOUTH AND EAST-WEST TUNNEL MECHANICAL PIPING PLANS
M-103	MECHANICAL SEQUENCE AND TEMPORARY SERVICE PLAN
M-301	MH-1 THRU MH-3 ENLARGED MANHOLE PLANS AND SECTIONS
M-302	MH-4 AND MH-5 ENLARGED MANHOLE PLANS AND SECTIONS
M-501	MECHANICAL DETAILS
M-601	MECHANICAL SCHEDULES
M-602	MECHANICAL SCHEMATICS
E-101	DEMO EXISTING TUNNEL ELECTRIC
E-102	12.5 kV POWER DUCT BANK PLAN
E-103	12.5 kV DISTRIBUTION PLAN
E-501	ELECTRICAL DETAILS AND SECTIONS
E-601	CAMPUS DISTRIBUTION SYSTEM FEEDER CONNECTION DIAGRAM



 **Intermountain Consumer Professional Engineers, Inc.**
CONSULTING ENGINEERS
1145 E. SOUTH UNION AVE.
MIDVALE, UTAH 84047
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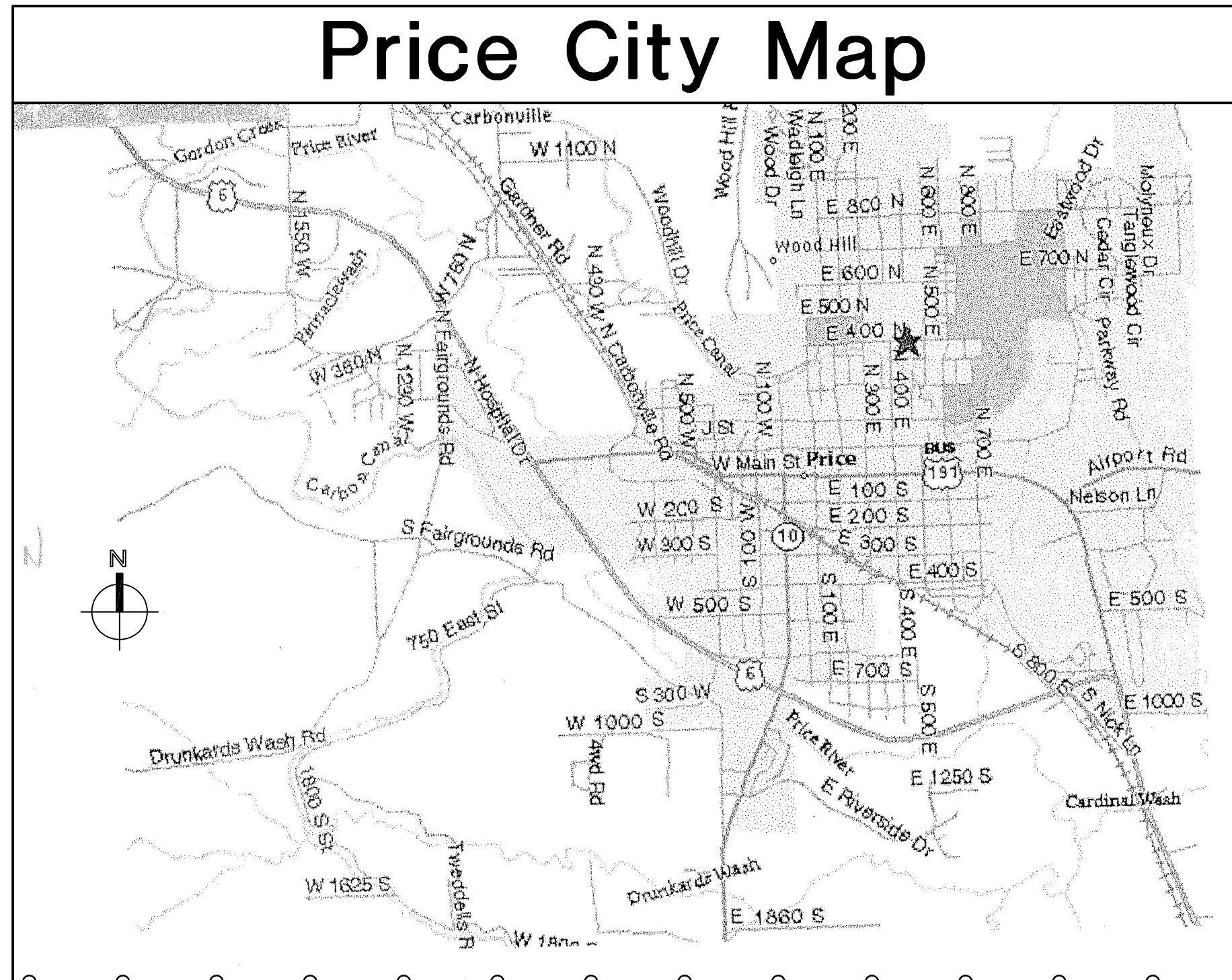
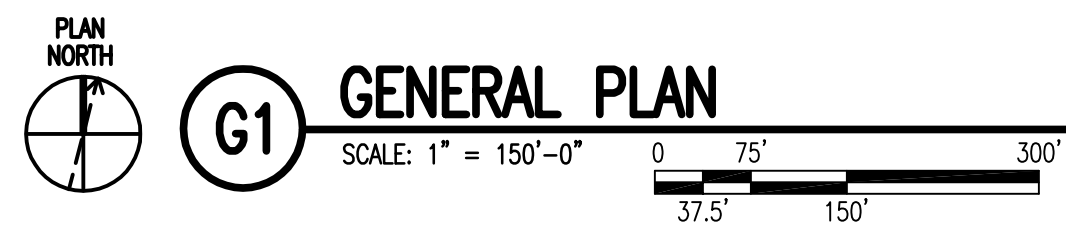
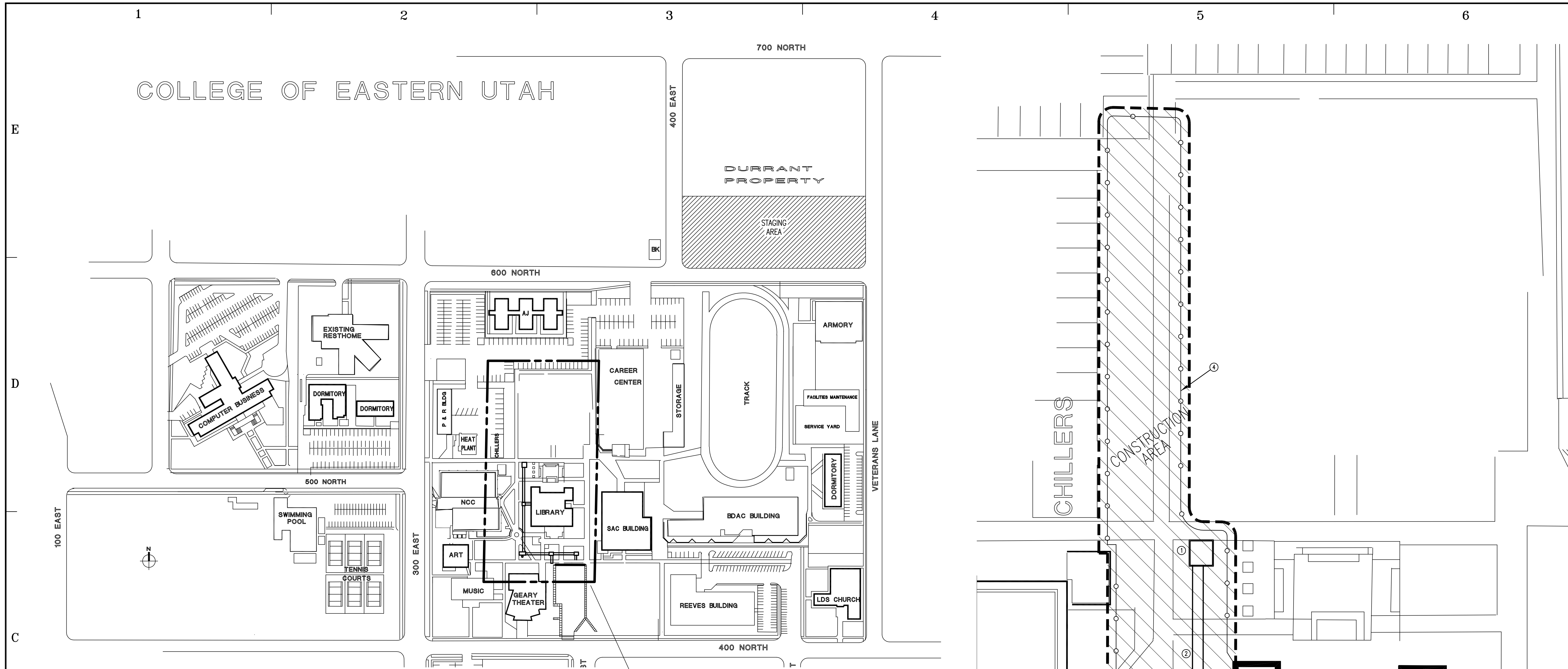


CENTRAL TUNNEL REPLACEMENT

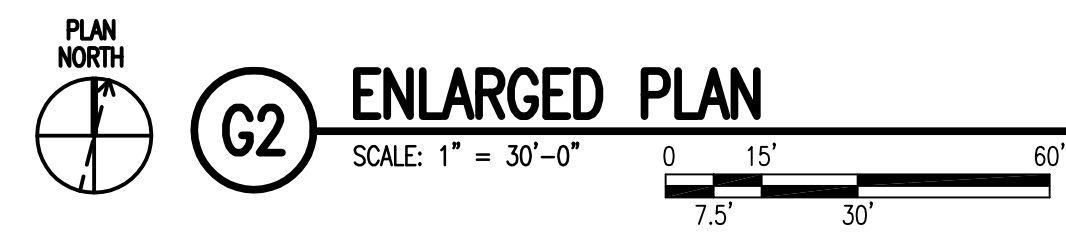
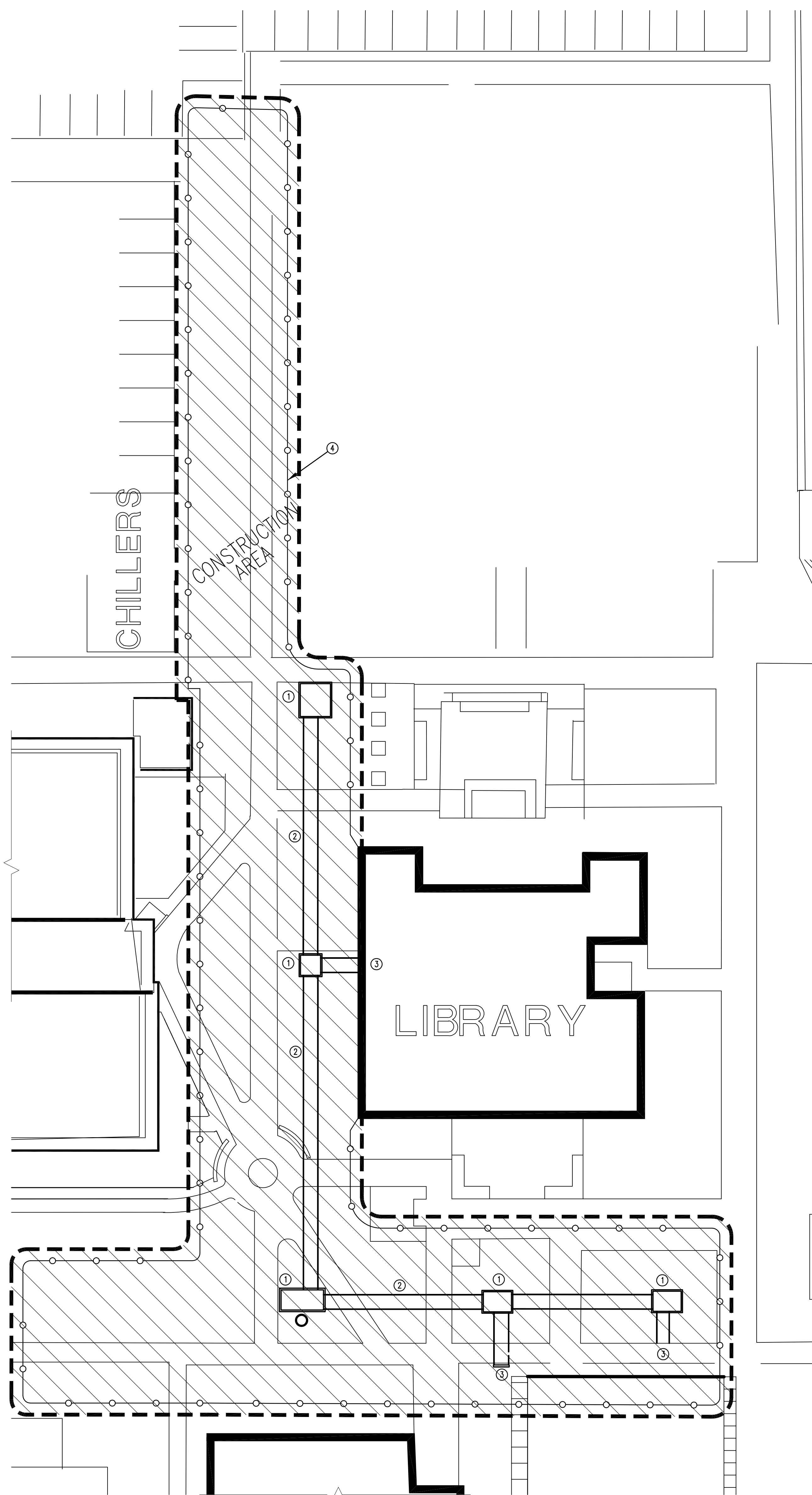
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MARK	DATE	DESCRIPTION
ISSUE DATE:	05/23/05	
PROJECT NO:	10-095	
CAD DWG FILE:	G-001	
DRAWN BY:	KPN	
CHECKED BY:	RD	

COVER SHEET

G - 001
SHEET 1 OF 22



- Keyed Notes**
- ① TYPICAL MANHOLE
 - ② MAIN TUNNEL
 - ③ SIDE TUNNEL
 - ④ CONSTRUCTION AREA FENCE



State of Utah - Department of Administrative Services
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT
410 State Office Building/Salt Lake City, Utah 84143-2008

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REGISTERED PROFESSIONAL ENGINEER
No. 166518
CRAIG M. YOUNG
STATE OF UTAH

COLLEGE OF EASTERN UTAH

PRICE, UTAH

CENTRAL TUNNEL REPLACEMENT

STATE PROPERTY ID. #02061
DFCM PROJECT #03217610

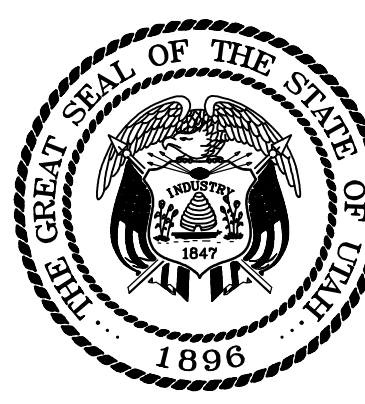
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ISSUE DATE: 05/23/05		
PROJECT NO: 10-095		
CAD DWG FILE: G-002		
DRAWN BY: KPN		
CHECKED BY: RDT		

SHEET TITLE

GENERAL ARRANGEMENT PLAN

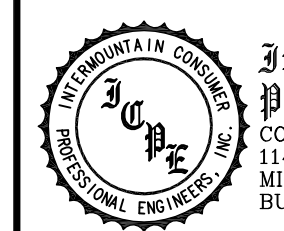
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HZ	HERTZ																																																																																																																																																																																																																																																																
ID	INSIDE DIAMETER																																																																																																																																																																																																																																																																
IN	INCH																																																																																																																																																																																																																																																																
KW	KILOWATTS																																																																																																																																																																																																																																																																
LAT	LEAVING AIR TEMPERATURE																																																																																																																																																																																																																																																																
LBS	POUNDS																																																																																																																																																																																																																																																																
LRA	LOCKED ROTOR AMPS																																																																																																																																																																																																																																																																
MAX.	MAXIMUM																																																																																																																																																																																																																																																																
MBH	BRITISH THERMAL UNITS PER HOUR (THOUSANDS)																																																																																																																																																																																																																																																																
MECH.	MECHANICAL																																																																																																																																																																																																																																																																
MH	MANHOLE																																																																																																																																																																																																																																																																
MIN	MINIMUM																																																																																																																																																																																																																																																																
OA	OUTSIDE AIR																																																																																																																																																																																																																																																																
OCC	OCCUPIED																																																																																																																																																																																																																																																																
OD	OUTSIDE DIAMETER																																																																																																																																																																																																																																																																
PD	PRESSURE DROP																																																																																																																																																																																																																																																																
PL	PLATE																																																																																																																																																																																																																																																																
PH	PHASE																																																																																																																																																																																																																																																																
PSIG	POUNDS PER SQUARE INCH GAGE																																																																																																																																																																																																																																																																
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(R)	RELOCATE OR RELOCATED																																																																																																																																																																																																																																																																
RA	RETURN AIR																																																																																																																																																																																																																																																																
(REF)	REFERENCE																																																																																																																																																																																																																																																																
RD	ROOF DRAIN																																																																																																																																																																																																																																																																
RDO	ROOF DRAIN OVERFLOW																																																																																																																																																																																																																																																																
RH	RELATIVE HUMIDITY																																																																																																																																																																																																																																																																
RPM	REVOLUTIONS PER MINUTE																																																																																																																																																																																																																																																																
SA	SUPPLY AIR																																																																																																																																																																																																																																																																
STD	STANDARD																																																																																																																																																																																																																																																																
SP	STATIC PRESSURE																																																																																																																																																																																																																																																																
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TEMP	TEMPERATURE																																																																																																																																																																																																																																																																
TOS OR T/S	TOP OF STEEL																																																																																																																																																																																																																																																																
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VFD	VARIABLE FREQUENCY DRIVE																																																																																																																																																																																																																																																																
WB	WET BULB TEMPERATURE																																																																																																																																																																																																																																																																
WC	WATER COLUMN																																																																																																																																																																																																																																																																
WS	WATERSTOP																																																																																																																																																																																																																																																																
WT	WEIGHT																																																																																																																																																																																																																																																																
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State of Utah-Department of Administrative Services
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT
410 State Office Building/Salt Lake City, Utah 84143/208-3018

CONSULTANTS



Intermountain Consumer Professional Engineers, Inc.
CONSULTING ENGINEERS
1145 S. SOUTH UNION AVE.
MIDVALE, UTAH 84047
BUS. (801) 255-1111 FAX: 566-0088

COLLEGE OF EASTERN UTAH

PRICE, UTAH

CENTRAL TUNNEL REPLACEMENT

STATE PROPERTY ID. #02061
DFCM PROJECT #03217610

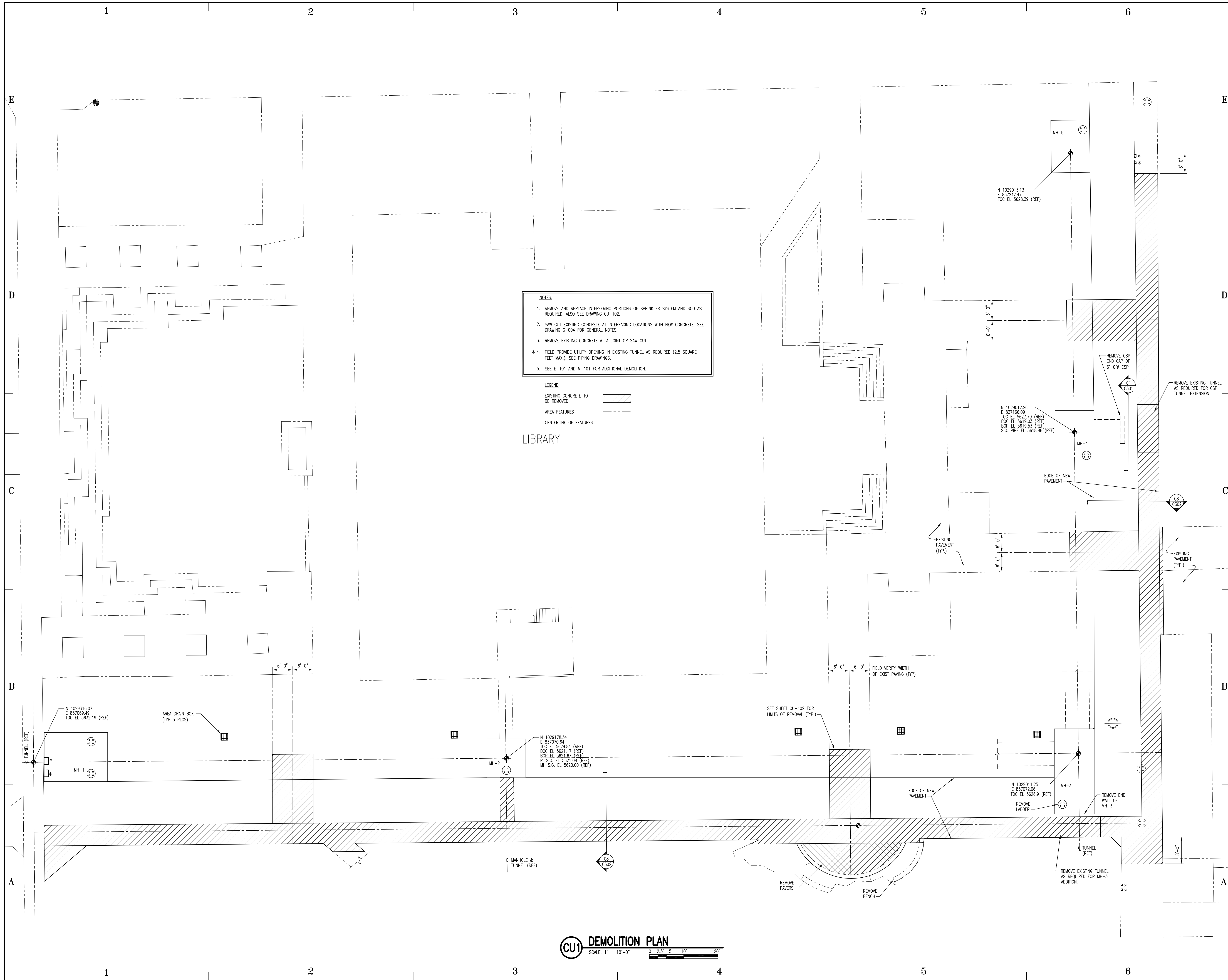
0	05/23/05	ISSUED FOR CONSTRUCTION
MARK	DATE	DESCRIPTION
ISSUE DATE:		05/23/05
PROJECT NO:		10-095
CAD DWG FILE:		G-003
DRAWN BY:		KPN
CHECKED BY:		RDT

SHEET TITLE

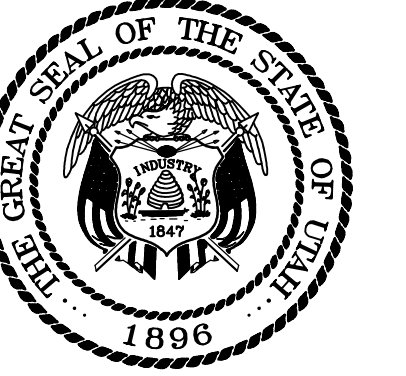
SYMBOLS AND ABBREVIATIONS

G-003

SHEET 3 OF 22



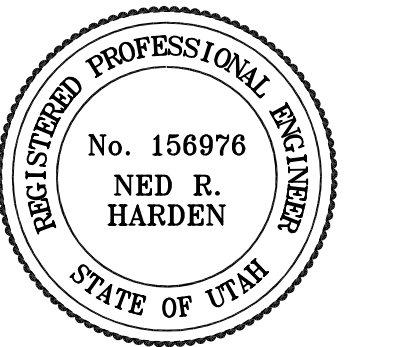
CU1 DEMOLITION PLAN
SCALE: 1" = 10'-0"
0 2.5' 5' 10' 20'



State of Utah-Department of Administrative Services
DIVISION OF FACILITIES CONSTRUCTION
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410 State Office Building/Salt Lake City, Utah 84114/208-2018

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**COLLEGE OF
EASTERN
UTAH**

PRICE, UTAH

CENTRAL TUNNEL
REPLACEMENT

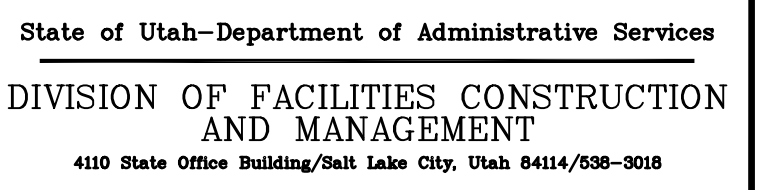
STATE PROPERTY ID. #02061
DFCM PROJECT #03217610

MARK	DATE	DESCRIPTION
0	05/23/05	ISSUED FOR CONSTRUCTION
1	05/23/05	PROJECT NO: 10-095
2	05/23/05	CAD DWG FILE: CU-DP-101
3	05/23/05	DRAWN BY: KPN
4	05/23/05	CHECKED BY: NRH

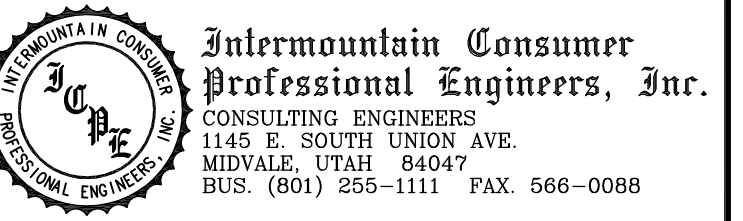
SHEET TITLE

DEMOLITION PLAN

CU-101
SHEET 5 OF 22



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CENTRAL TUNNEL REPLACEMENT

STATE PROPERTY ID. #02061
DFCM PROJECT #03217610

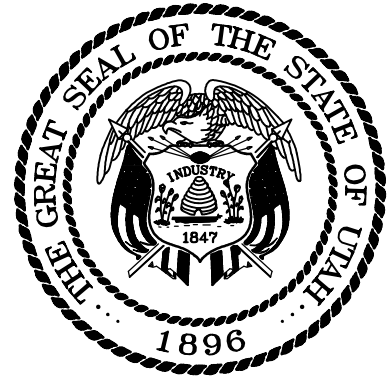
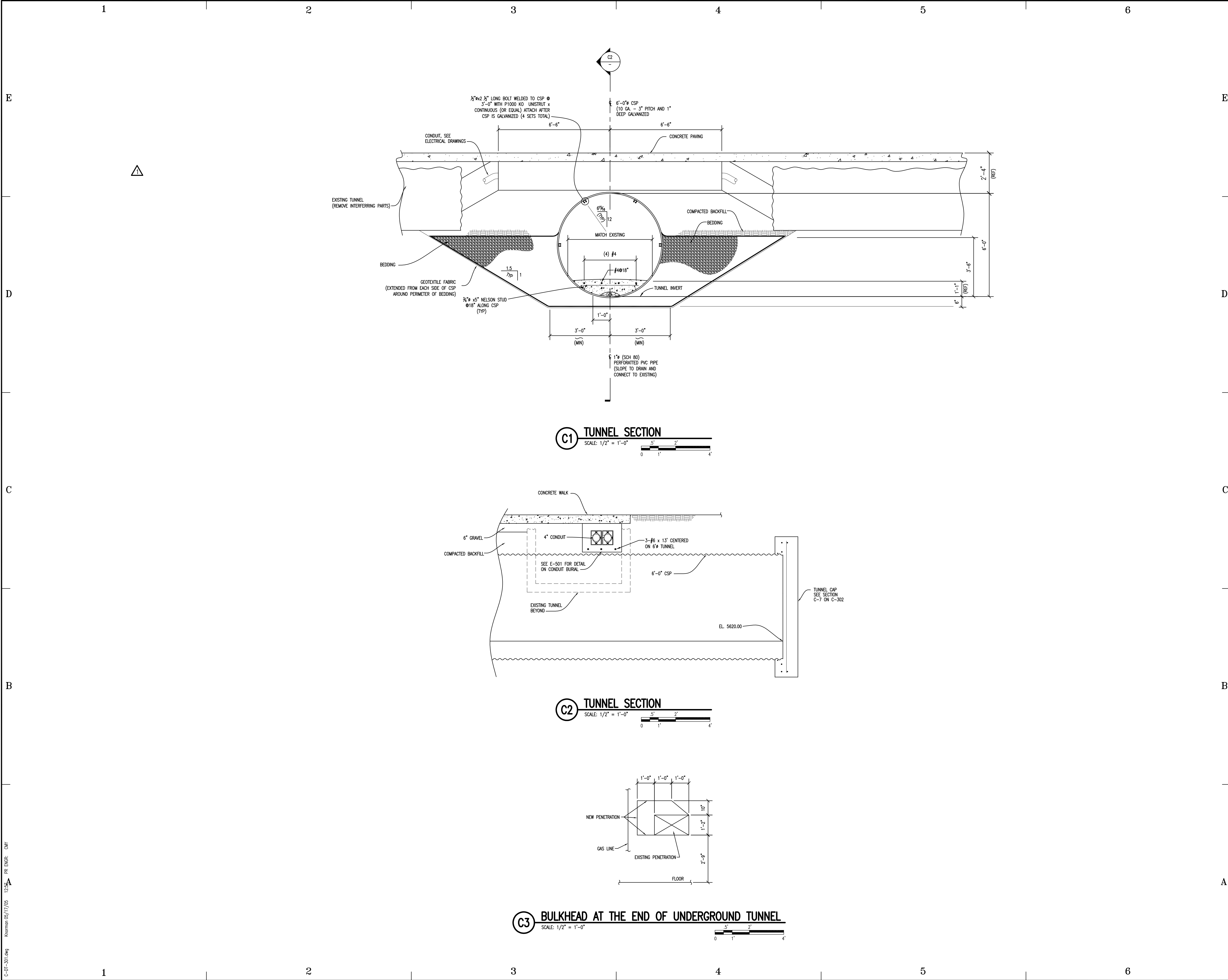
0	05/23/05	ISSUED FOR CONSTRUCTION
MARK	DATE	DESCRIPTION
ISSUE DATE:	05/23/05	
PROJECT NO:	10-095	
CAD DWG FILE:	CU-SC-102	
DRAWN BY:	KPN	
CHECKED BY:	NRH	

SHEET TITLE

PAVING AND
STRUCTURAL PLAN

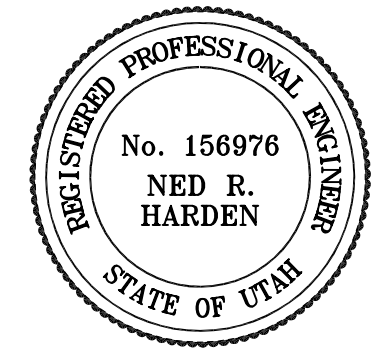
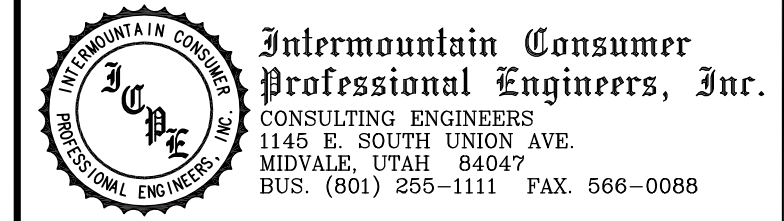
CU-102

HEET 6 OF 22



State of Utah-Department of Administrative Services
DIVISION OF FACILITIES CONSTRUCTION
AND MANAGEMENT
410 State Office Building/Salt Lake City, Utah 84143/801-538-3018

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COLLEGE OF EASTERN UTAH

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CENTRAL TUNNEL
REPLACEMENT

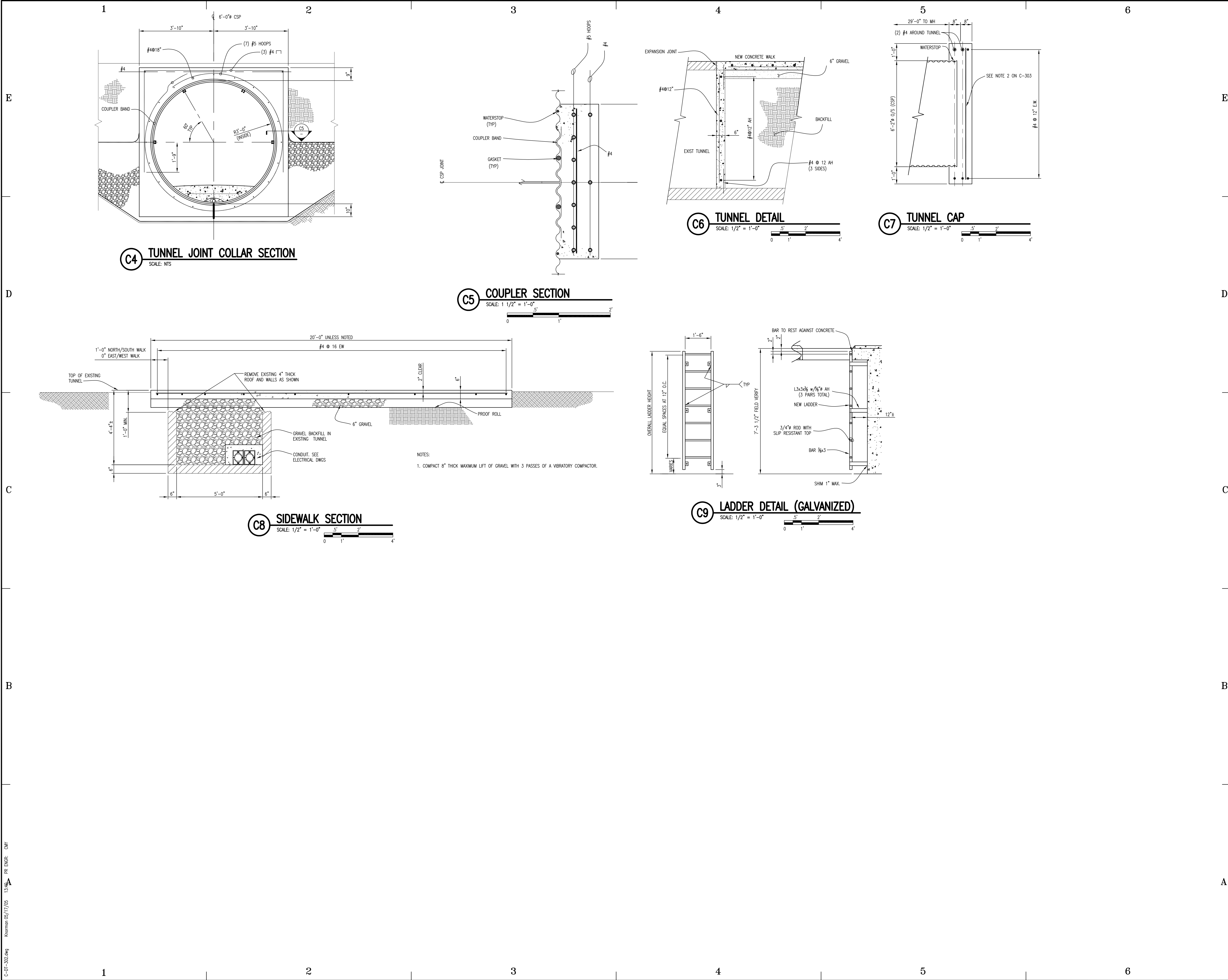
STATE PROPERTY ID. #02061
DFCM PROJECT #03217610

MARK	DATE	DESCRIPTION
0	05/23/05	ISSUED FOR CONSTRUCTION
ISSUE DATE: 05/23/05		
PROJECT NO: 10-095		
CAD DWG FILE: C-DT-301		
DRAWN BY: KPN		
CHECKED BY: NRH		

SHEET TITLE

TUNNEL SECTIONS
AND DETAILS

C-301
SHEET 7 OF 22



State of Utah—Department of Administrative Services
DIVISION OF FACILITIES CONSTRUCTION
AND MANAGEMENT
410 State Office Building/Salt Lake City, Utah 84114/208-2618

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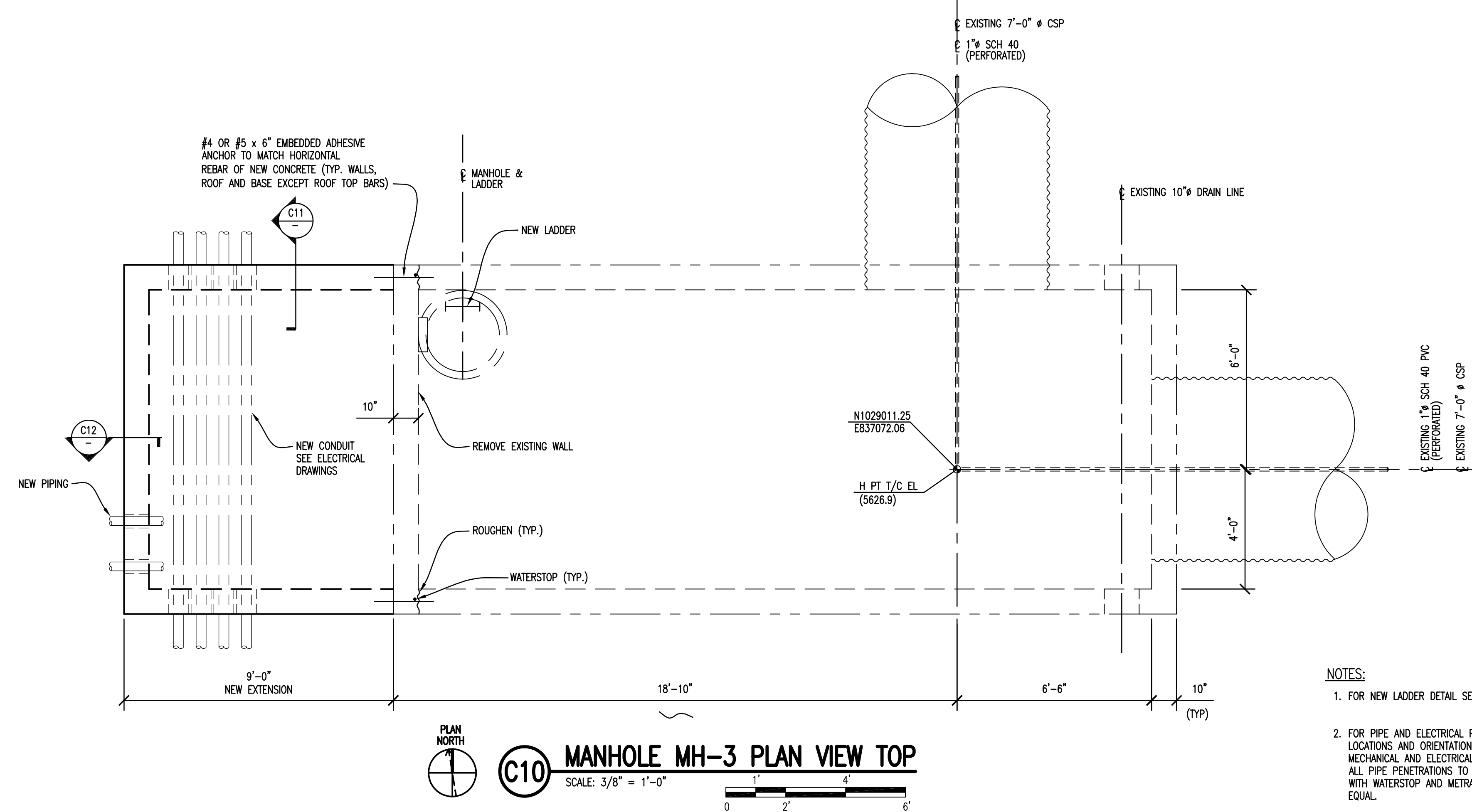
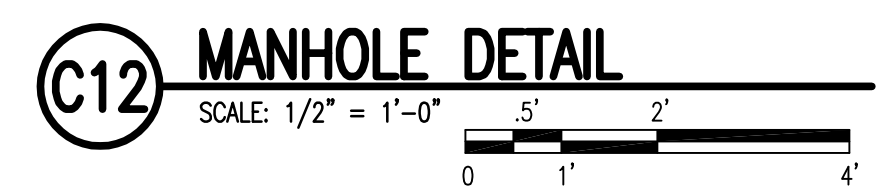
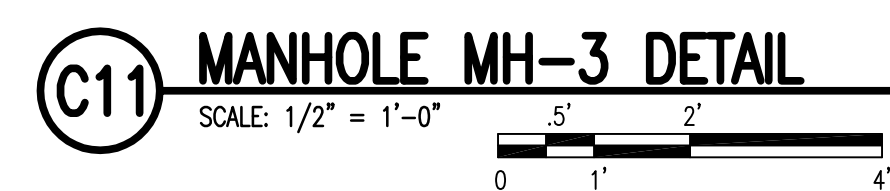
CENTRAL TUNNEL
REPLACEMENT

STATE PROPERTY ID. #02061
DFCM PROJECT #03217610


0	05/23/05	ISSUED FOR CONSTRUCTION
MARK	DATE	DESCRIPTION
ISSUE DATE:		05/23/05
PROJECT NO:		10-095
CAD DWG FILE:		C-DT-302
DRAWN BY:		KPN
CHECKED BY:		NRH

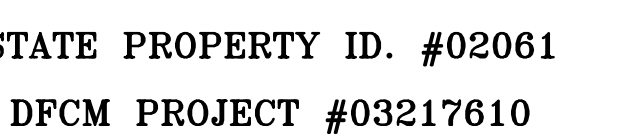
SHEET TITLE
TUNNEL SECTIONS
AND DETAILS

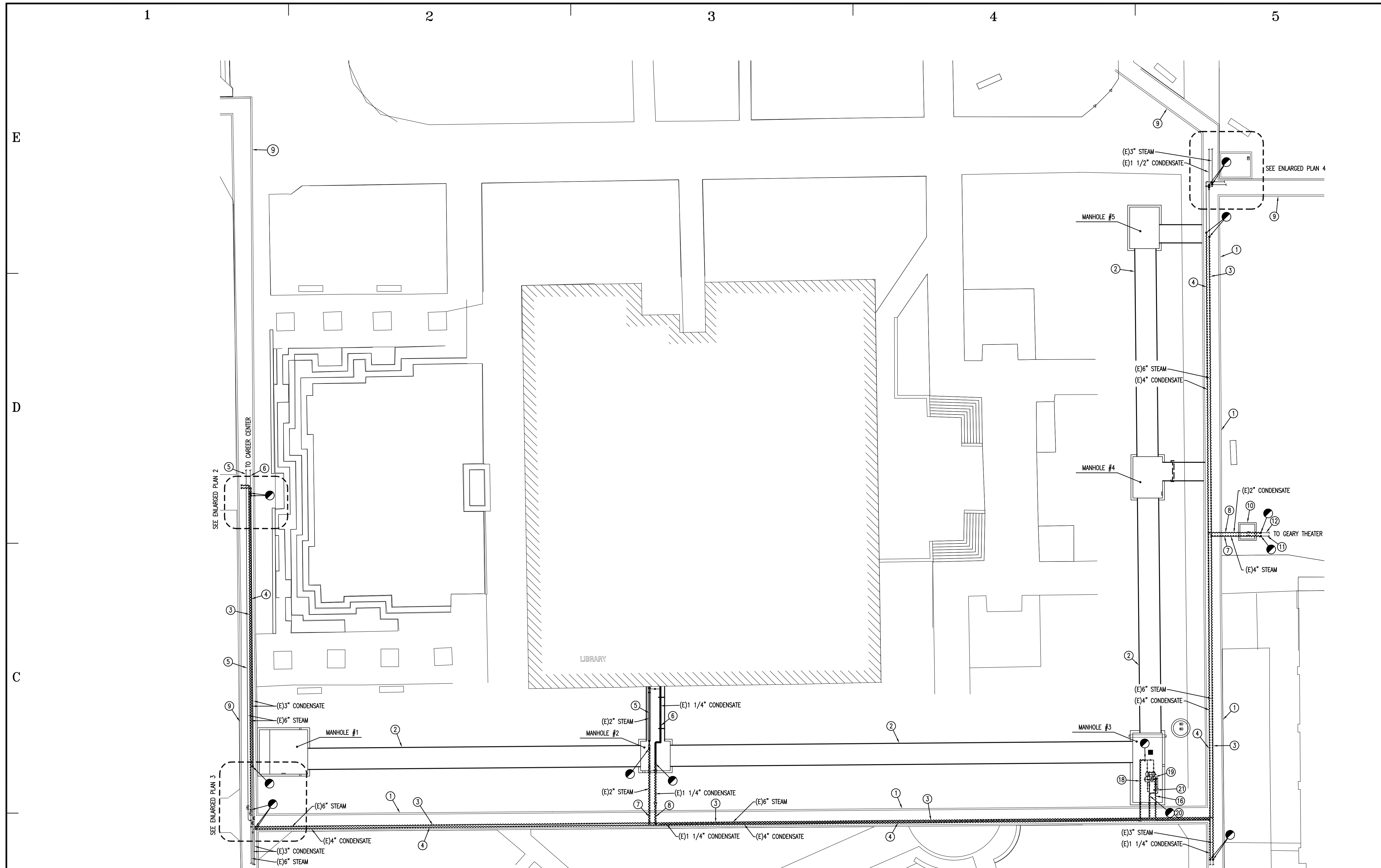
C-302
SHEET 8 OF 22



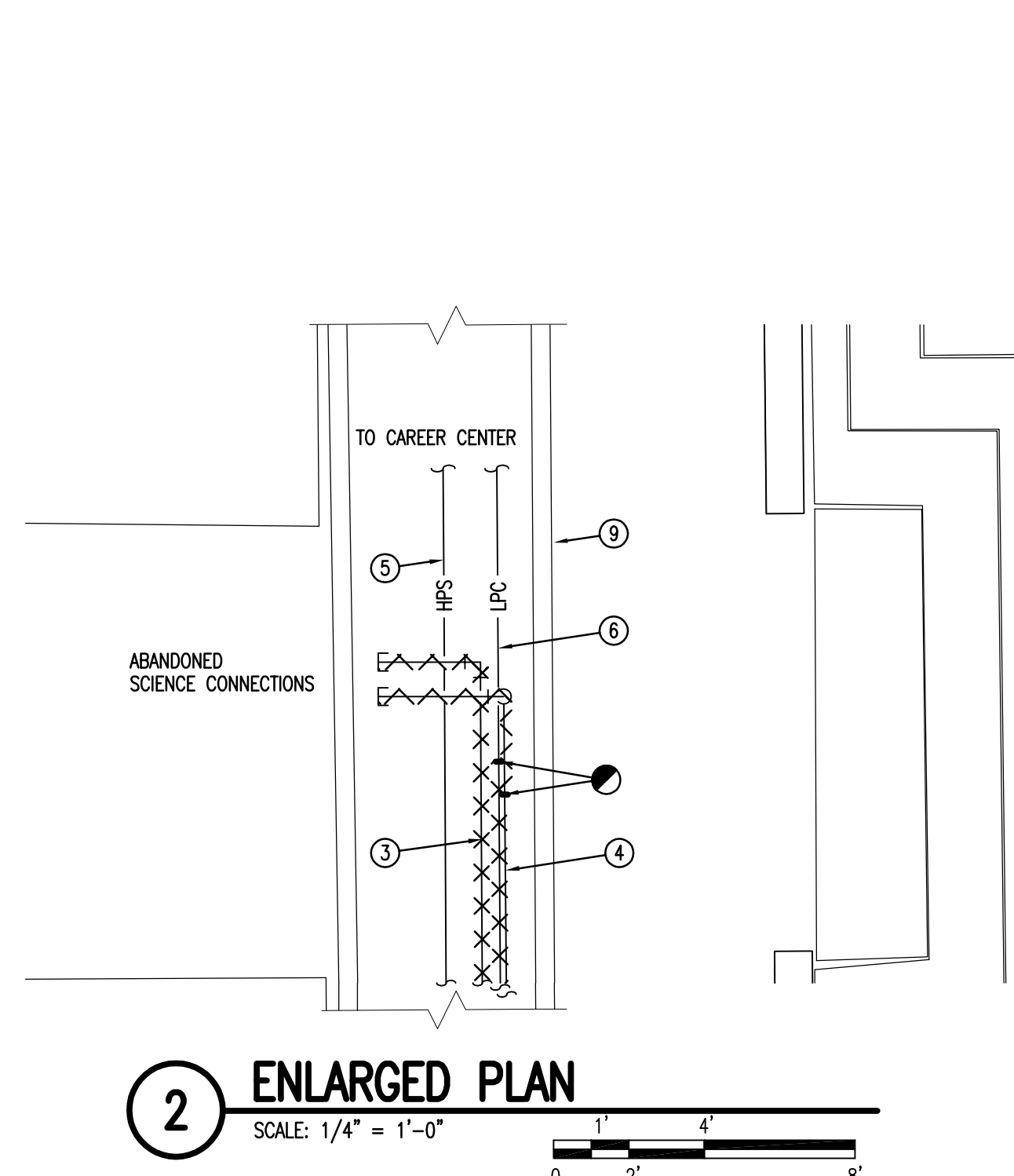
NOTES:

1. FOR NEW LADDER DETAIL SEE 
2. FOR PIPE AND ELECTRICAL PENETRATIONS, LOCATIONS AND ORIENTATION, REFER TO MECHANICAL AND ELECTRICAL DRAWINGS. ALL PIPE PENETRATIONS TO BE SLEEVED WITH WATERSTOP AND METRAFLEX OR EQUAL.

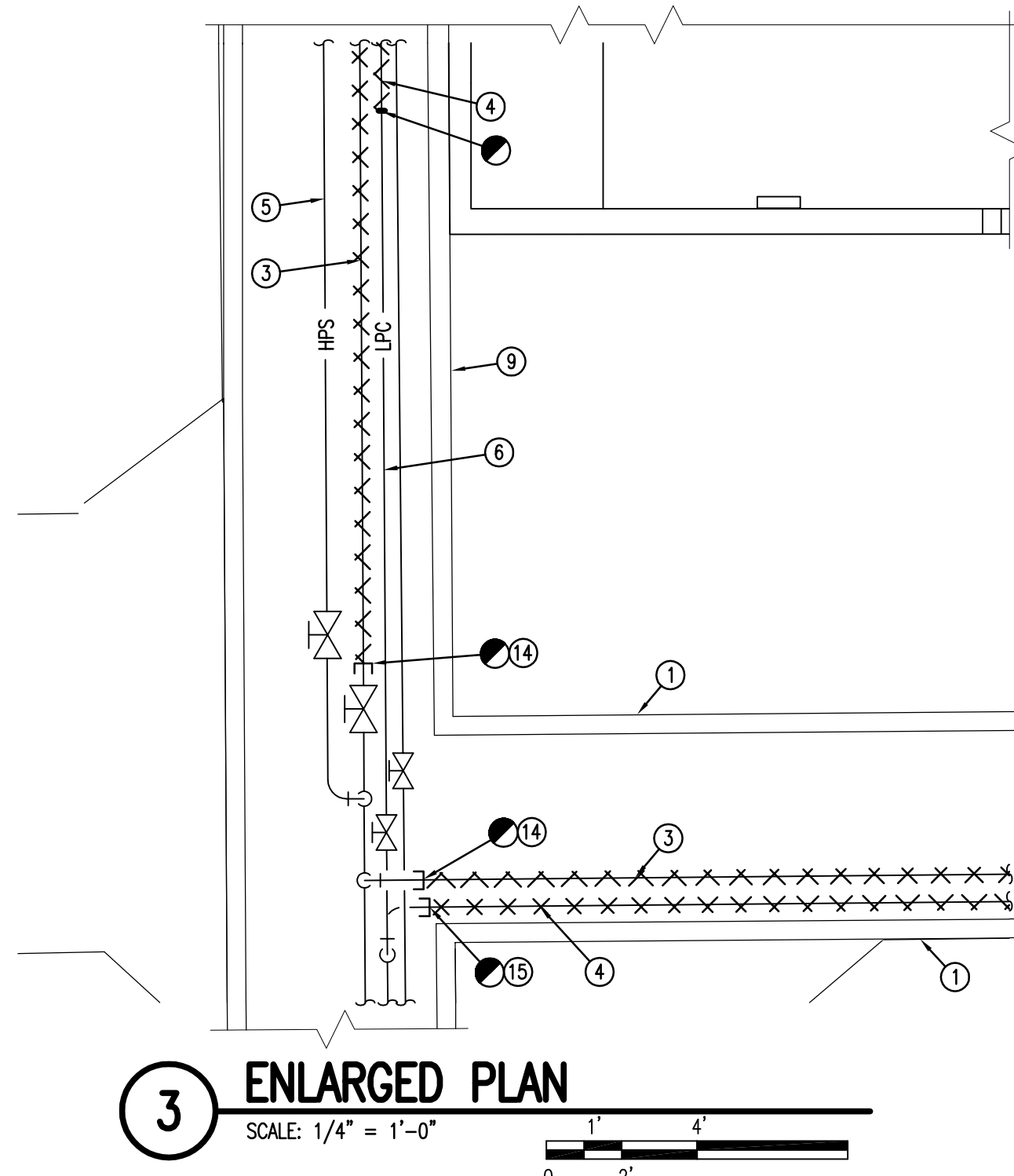
C - 303



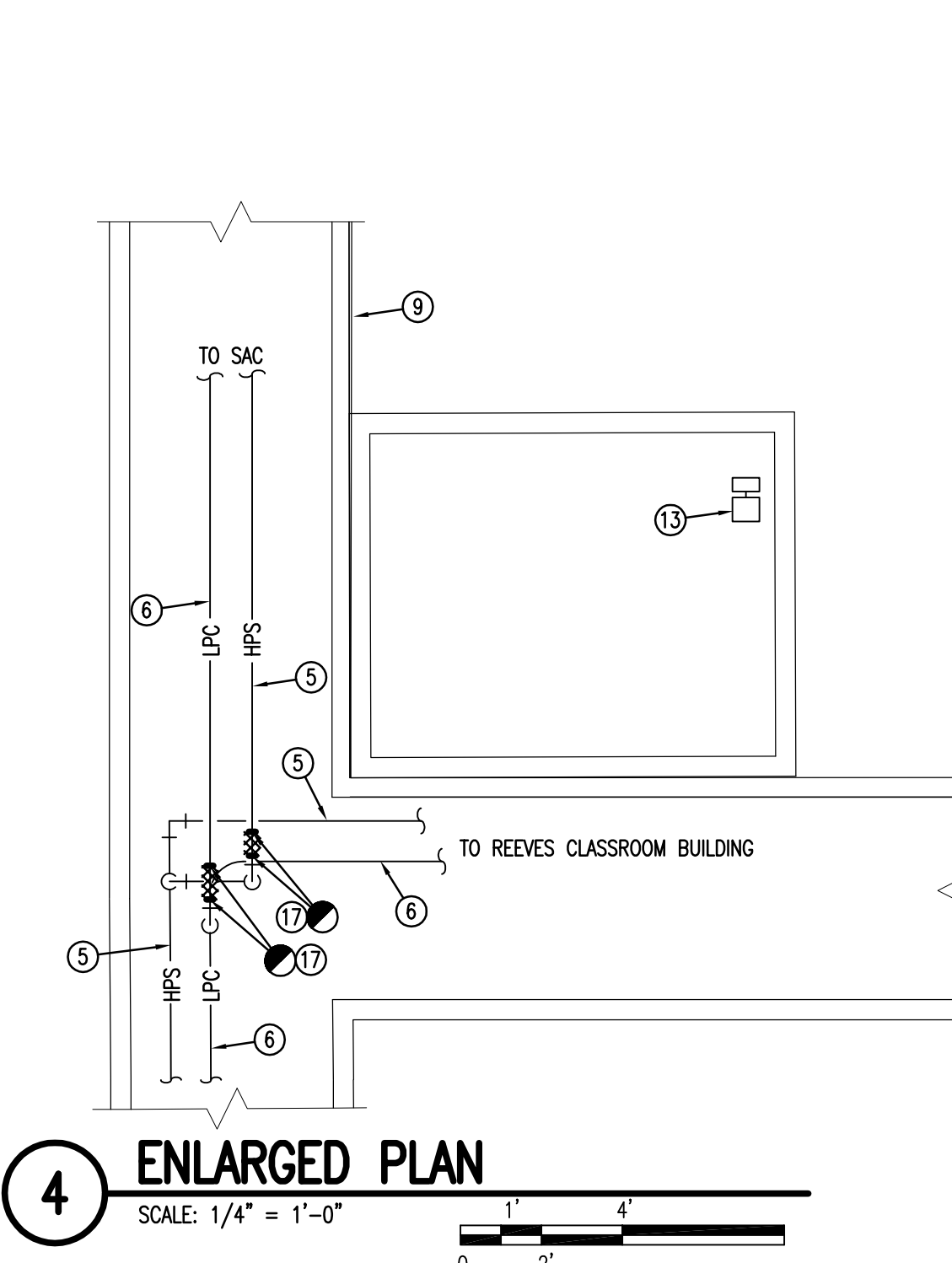
1 MECHANICAL DEMOLITION PLAN (FOR SEQUENCING, SEE SHEET M-104)
SCALE: 1/16" = 1'-0"
0 8' 16' 32'



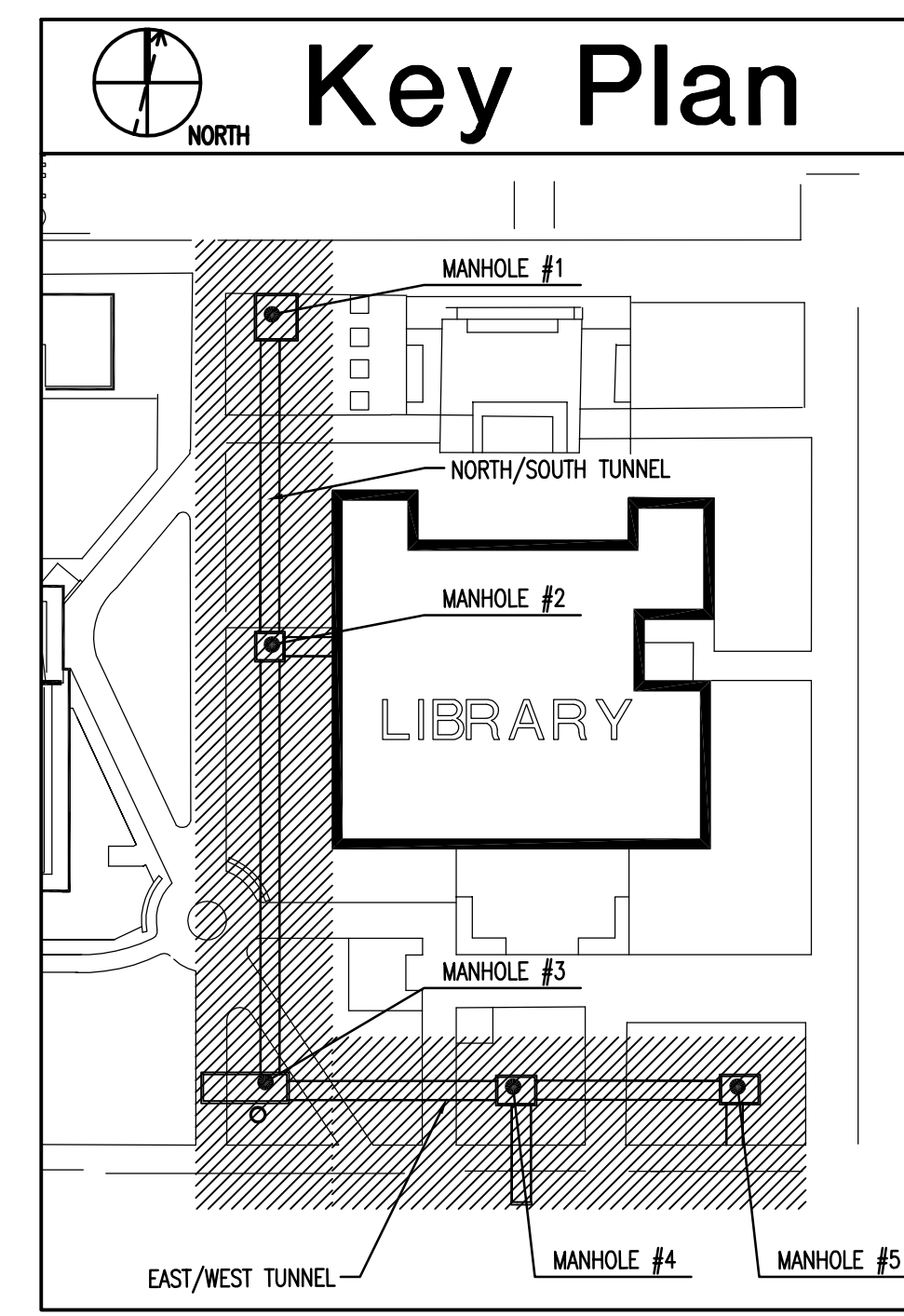
2 ENLARGED PLAN
SCALE: 1/4" = 1'-0"
0 2' 4' 8'



3 ENLARGED PLAN
SCALE: 1/4" = 1'-0"
0 2' 4' 8'



4 ENLARGED PLAN
SCALE: 1/4" = 1'-0"
0 2' 4' 8'



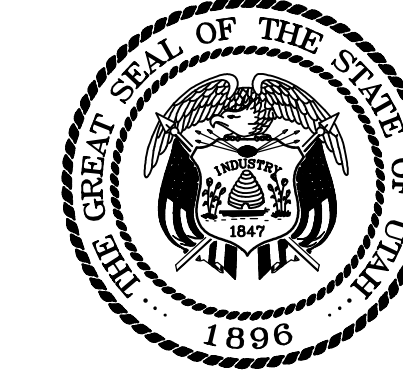
Key Plan
NORTH

Keyed Notes

- EXISTING CONCRETE UTILITY TUNNEL BELOW GRADE TO BE ABANDONED AND BACKFILLED UNDER THIS CONTRACT. SEE STRUCTURAL DRAWINGS.
- EXISTING STEEL UTILITY TUNNEL BELOW GRADE TO REMAIN. SEE SHEET M-102 FOR NEW MECHANICAL IN TUNNEL SYSTEM.
- DEMOLISH EXISTING STEAM PIPING IN UTILITY TUNNEL.
- DEMOLISH EXISTING CONDENSATE PIPING IN UTILITY TUNNEL.
- EXISTING STEAM PIPING IN UTILITY TUNNEL TO REMAIN.
- EXISTING CONDENSATE PIPING IN UTILITY TUNNEL TO REMAIN. SEE MANHOLE #2 ON SHEET M-301 FOR NEW CONDENSATE PIPING.
- DEMOLISH EXISTING DIRECT BURIED STEAM PIPING.
- DEMOLISH EXISTING DIRECT BURIED CONDENSATE PIPING.
- EXISTING CONCRETE UTILITY TUNNEL BELOW GRADE TO REMAIN. SEE STRUCTURAL DRAWINGS.
- DEMOLISH EXISTING MANHOLE. REMOVE EXISTING 4" STEAM VALVE AND 2" CONDENSATE VALVE. SEE SHEET M-302 FOR NEW MECHANICAL.
- EXISTING DIRECT BURIED STEAM PIPING TO REMAIN. SEE MANHOLE #4 ON SHEET M-302 FOR CONNECTION TO NEW STEAM PIPING.
- EXISTING DIRECT BURIED CONDENSATE PIPING TO REMAIN. SEE MANHOLE #4 ON SHEET M-302 FOR CONNECTION TO NEW CONDENSATE PIPING.
- EXISTING SUMP PUMP TO REMAIN. SHOWN FOR REFERENCE ONLY.
- CAP EXISTING STEAM PIPING.
- CAP EXISTING CONDENSATE PIPING.
- DEMOLISH EXISTING CONDENSATE PIPING. COORDINATE TERMINATION OF DEMOLITION WITH NEW CONDENSATE PIPING TO BE INSTALLED IN THIS AREA. SEE MANHOLE #3 ON SHEET M-301.
- CONTRACTOR TO REMOVE PIPE BETWEEN POINTS INDICATED TO ALLOW FOR INSTALLATION OF NEW VALVES. SEE SHEET M-302.
- DEMOLISH EXISTING PUMPED CONDENSATE PIPING FROM FLANGED CONNECTION AT CONDENSATE PUMP. SEE MANHOLE #3 ON SHEET M-301 FOR NEW CONDENSATE PIPING.
- EXISTING CONDENSATE PUMP TO REMAIN. SEE MANHOLE #3 ON SHEET M-301 FOR NEW WORK.
- DEMOLISH EXISTING STEAM PIPING. COORDINATE TERMINATION OF DEMOLITION WITH NEW STEAM PIPING TO BE INSTALLED IN THIS AREA. SEE MANHOLE #3 ON SHEET M-301.
- REMOVE EXISTING 4" VALVE FOR REUSE IN NEW PUMPED CONDENSATE PIPING. SEE MANHOLE #3 ON SHEET M-301 FOR NEW VALVE LOCATION.
- TERMINATE DEMOLITION OF EXISTING GRAVITY CONDENSATE PIPING AT FLANGED CONNECTION OF EXISTING CONDENSATE PUMP.

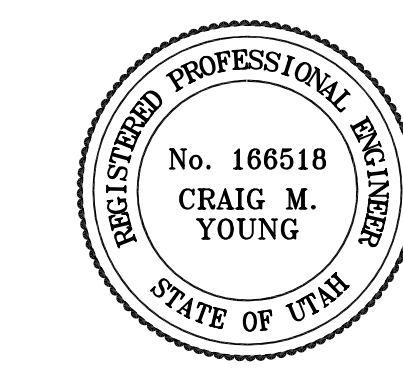
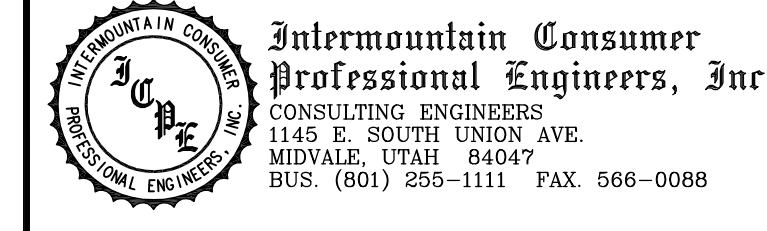
General Notes

- CONTRACTOR TO FIELD VERIFY AND ADJUST AS NECESSARY FOR EXISTING CONDITIONS.
- COORDINATE ALL DEMOLITION OF PIPING AND EQUIPMENT WITH OTHER DISCIPLINES AND SEQUENCE WITH NEW CONSTRUCTION AS INDICATED IN THE DRAWINGS.



State of Utah—Department of Administrative Services
DIVISION OF FACILITIES CONSTRUCTION
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410 State Office Building/Salt Lake City, Utah 84143/208-2018

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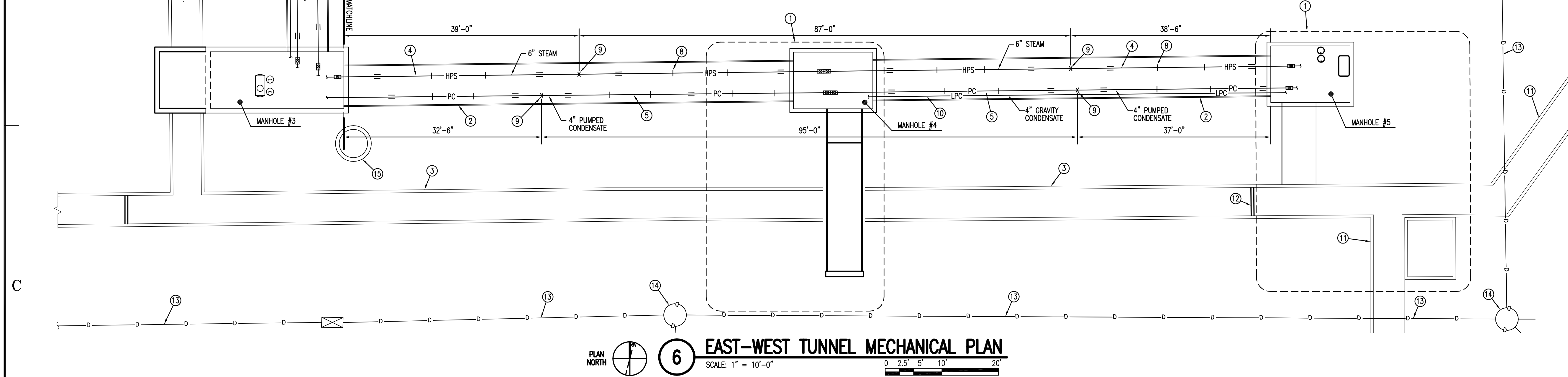
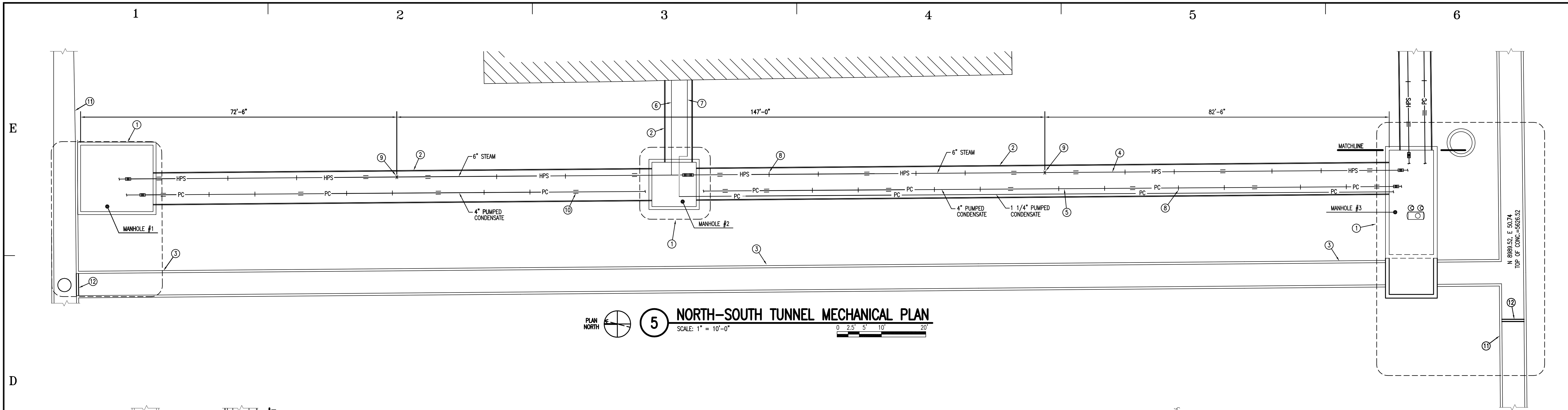
CENTRAL TUNNEL
REPLACEMENT

STATE PROPERTY ID. #02061
DFCM PROJECT #03217610

MARK	DATE	DESCRIPTION
0	05/23/05	ISSUED FOR CONSTRUCTION
1	05/23/05	PROJECT NO. 10-095
2	05/23/05	CAD DWG FILE: M-DP-101
3	05/23/05	DRAWN BY: KPN
4	05/23/05	CHECKED BY: RDT

SHEET TITLE
MECHANICAL
DEMOLITION PLAN

M-101
SHEET 10 OF 22

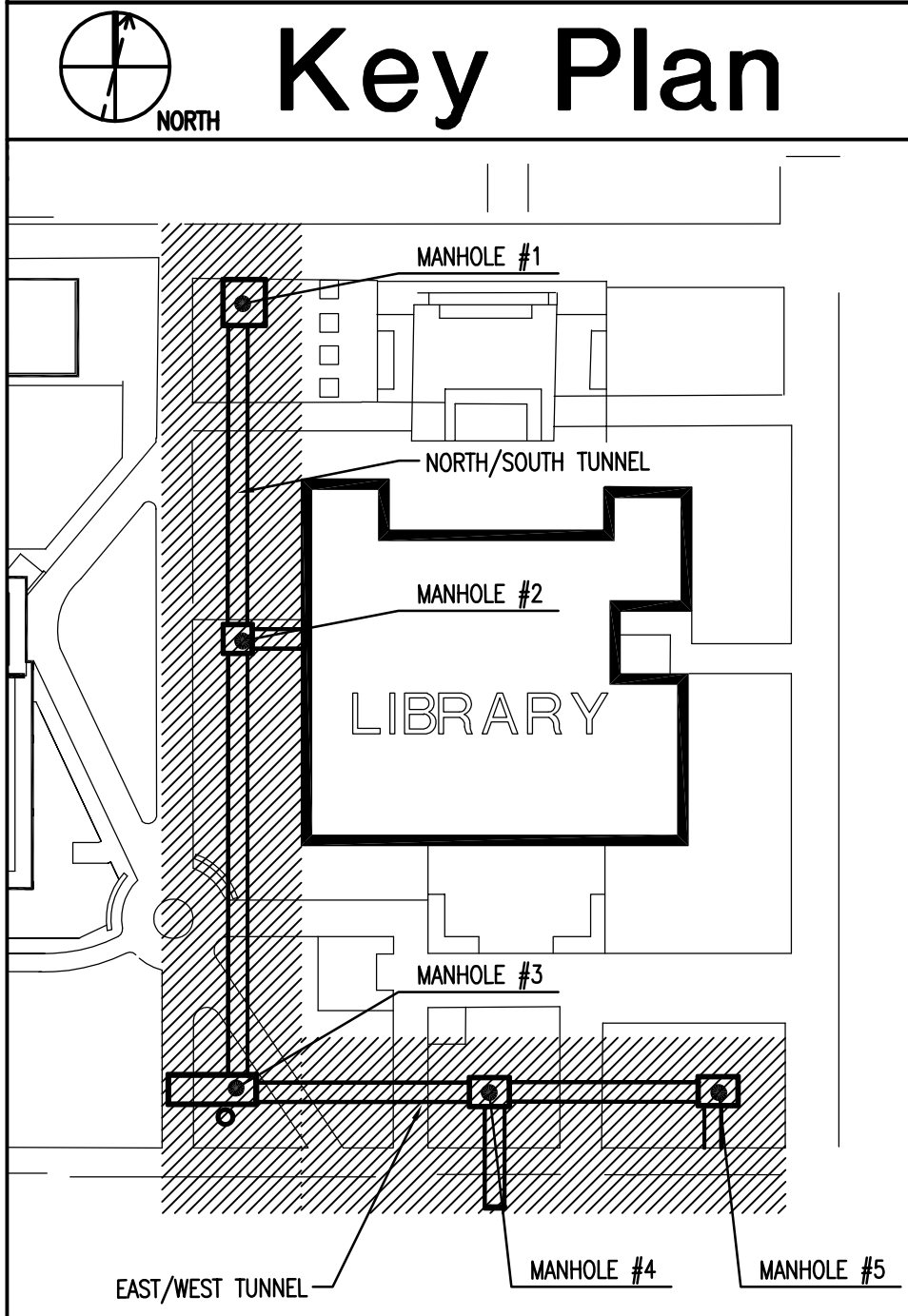



EXISTING PIPE STORED IN TUNNEL - PIPE SCHEDULE					
PIPE SIZE	SCHEDULE	LENGTH	PIPE SIZE	SCHEDULE	LENGTH
2"	40	42'-0"	2"	80	105'-0"
3"	40	168'-0"	2 1/2"	80	21'-0"
4"	40	63'-0"	3"	80	126'-0"
6"	40	546'-0"	4"	80	546'-0"

NOTE: THE PIPING BILL OF MATERIALS LISTED ABOVE HAS BEEN PREVIOUSLY STAGED INTO THE EXISTING TUNNEL FOR USE IN THE WORK DEPICTED ON THESE DRAWINGS.

- ### Keyed Notes
- EXISTING CONCRETE MANHOLE/EQUIPMENT VAULT BELOW GRADE. SEE ENLARGED PLANS ON SHEET M-301 AND M-302 FOR NEW MECHANICAL WORK IN THESE AREAS.
 - EXISTING STEEL UTILITY TUNNEL BELOW GRADE.
 - ABANDONED CONCRETE UTILITY TUNNEL BELOW GRADE.
 - NEW STEAM PIPE.
 - NEW PUMPED CONDENSATE PIPE.
 - EXISTING STEAM PIPING TO LIBRARY TO REMAIN.
 - EXISTING PUMPED CONDENSATE PIPING FROM LIBRARY TO REMAIN.
 - PIPE SUPPORT, TYPICAL. SEE DETAIL 4 ON SHEET M-501.
 - PIPE ANCHOR. SEE DETAIL 13 ON SHEET M-501. ANCHOR TO EXISTING 5'-0" LONG STEEL PLATE EMBEDDED IN CONCRETE FLOOR OF TUNNEL.
 - PIPE GUIDE, TYPICAL. SEE DETAIL 14 ON SHEET M-501.
 - EXISTING CONCRETE UTILITY TUNNEL BELOW GRADE TO REMAIN IN SERVICE. SEE ENLARGED PLANS ON SHEETS M-301 AND M-302 FOR EXISTING PIPING.
 - NEW CONCRETE BARRIER WALL IN EXISTING TUNNEL. SEE STRUCTURAL DRAWINGS.
 - EXISTING STORM DRAINAGE PIPING. SHOWN FOR REFERENCE ONLY.
 - EXISTING STORM DRAINAGE MANHOLE. SHOWN FOR REFERENCE ONLY.
 - EXISTING Dewatering SUMP MANHOLE. SHOWN FOR REFERENCE ONLY.

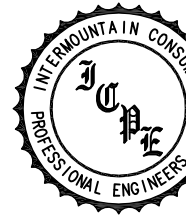
- ### General Notes
- PLAN VIEW INDICATES STEAM AND CONDENSATE PIPING COMPONENTS IN TUNNEL ONLY. ENLARGED MANHOLE PLANS SHOW ADDITIONAL PIPING AND COMPONENTS INCLUDED IN THIS CONTRACT.
 - REFER TO PIPE GUIDE SCHEDULE ON SHEET M-601 FOR TYPICAL GUIDES ASSOCIATED WITH PIPE SIZING.
 - EXISTING STEEL UTILITY TUNNELS SLOPE DOWNWARD FROM MANHOLE #1 TO #3 AND FROM MANHOLE #5 TO #3. NEW 6" STEAM, 1 1/4" AND 4" PUMPED CONDENSATE PIPING SLOPES ARE MATCH THE SLOPE OF TUNNELS. NEW 3" GRAVITY CONDENSATE IS TO SLOPE FROM MANHOLE #4 TO MANHOLE #5 AT 1/16" PER FOOT.
 - ALL UNCOATED FERROUS SURFACES TO BE COATED WITH "GALVANNE" OR APPROVED EQUAL PER MANUFACTURERS. TYPICAL OF PIPE STANDS GUIDES AND ANCHORS.



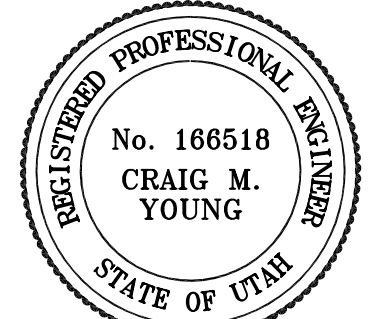


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No. 166518
CRAIG M.
YOUNG
REGISTERED PROFESSIONAL ENGINEER
STATE OF UTAH

COLLEGE OF EASTERN UTAH

PRICE, UTAH

CENTRAL TUNNEL
REPLACEMENT

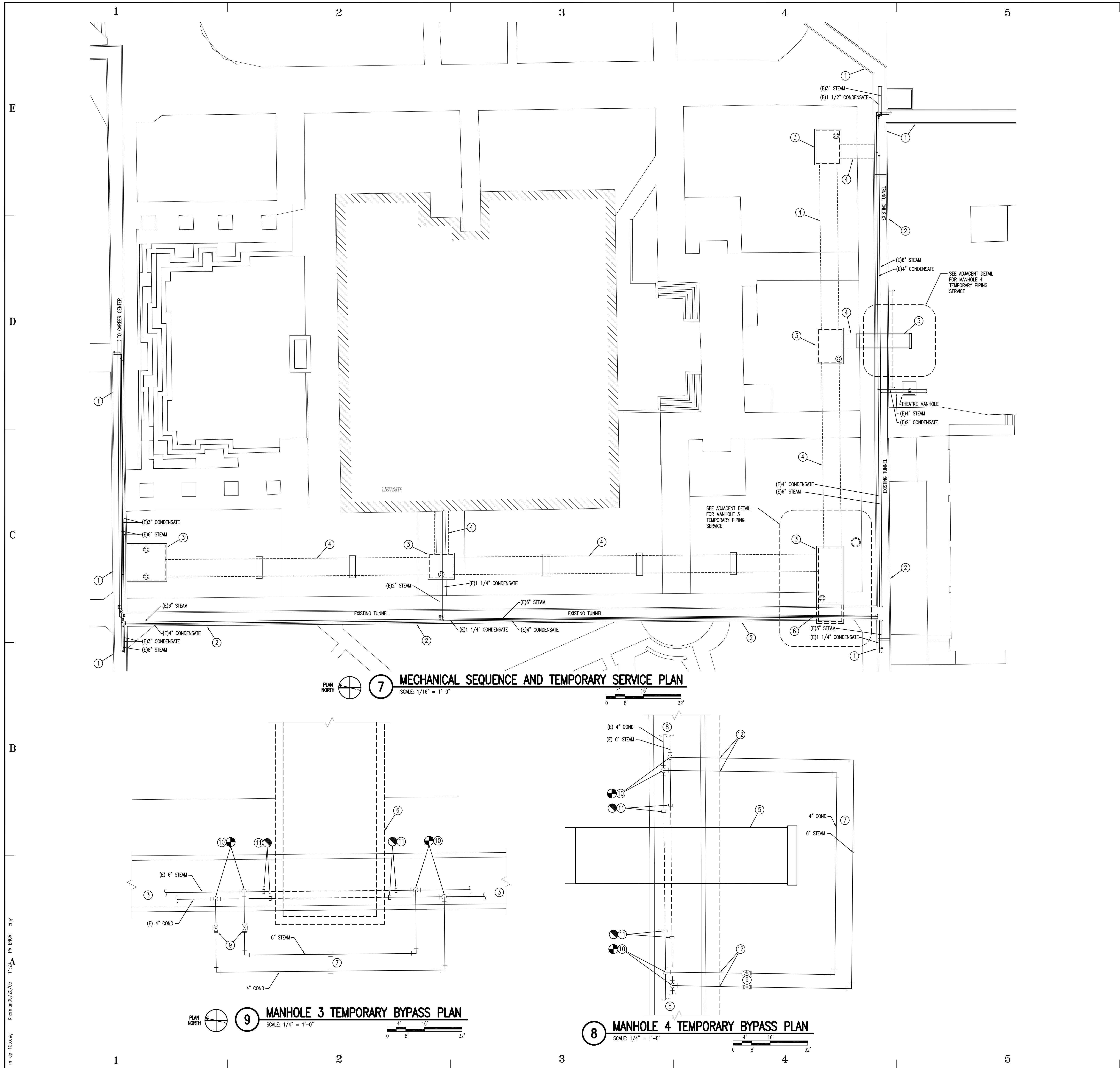
STATE PROPERTY ID. #02061
DFCM PROJECT #03217610

0	05/23/05	ISSUED FOR CONSTRUCTION
MARK	DATE	DESCRIPTION
ISSUE DATE:		05/23/05
PROJECT NO:		10-095
CAD DWG FILE:		m-sp-102
DRAWN BY:		KPN
CHECKED BY:		RDT

SHEET TITLE

NORTH-SOUTH AND
EAST-WEST TUNNEL
MECHANICAL PIPING PLANS

M - 102
SHEET 11 OF 22



Keyed Notes

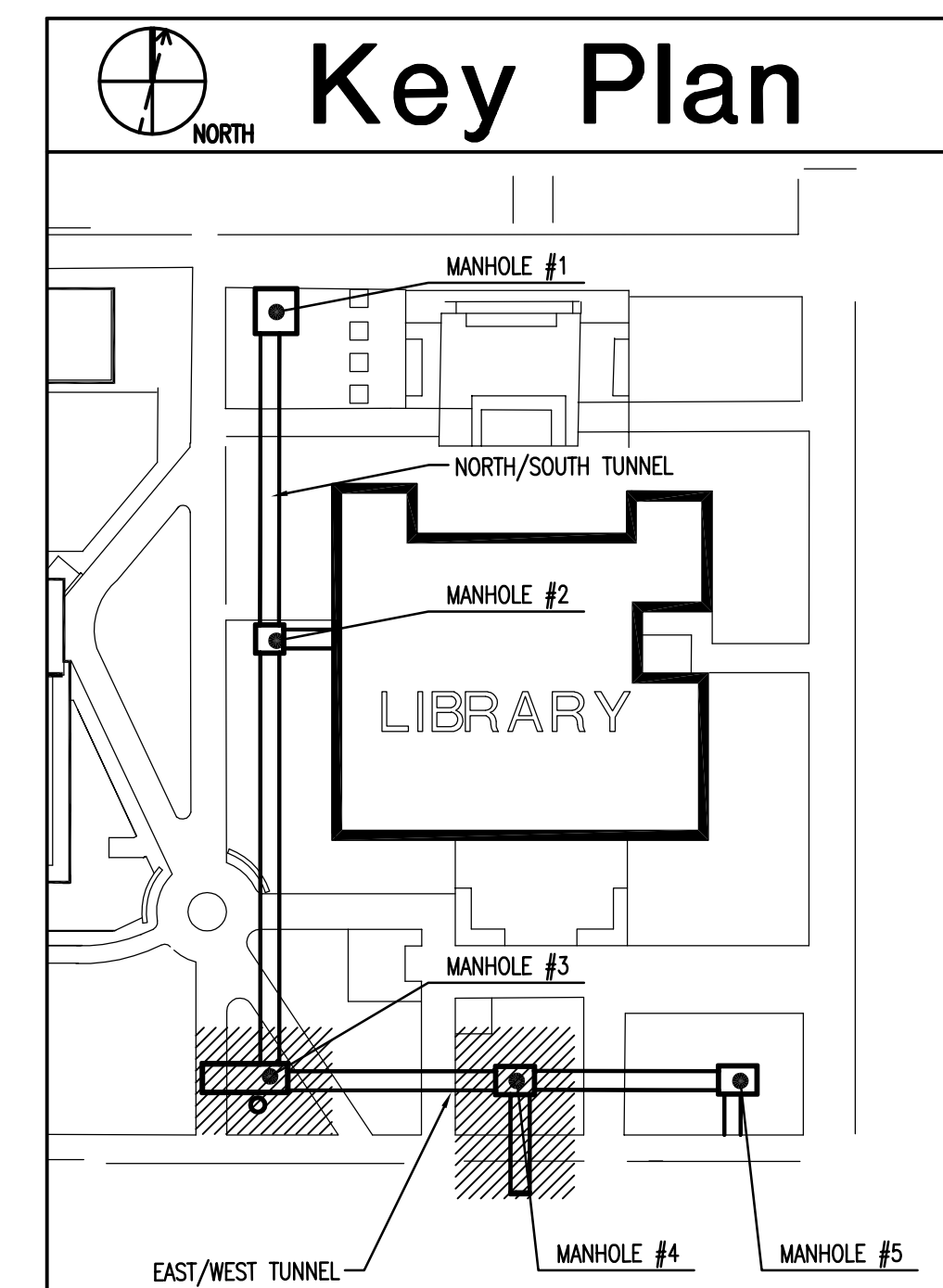
- EXISTING CONCRETE UTILITY TUNNEL TO REMAIN.
- EXISTING CONCRETE UTILITY TUNNEL BEING ABANDONED.
- EXISTING CONCRETE UTILITY MANHOLE.
- EXISTING STEEL UTILITY TUNNEL.
- NEW EXTENSION OF EXISTING STEEL TUNNEL.
- NEW EXTENSION OF EXISTING CONCRETE MANHOLE.
- PROVIDE TEMPORARY SERVICE REROUTES AROUND MANHOLE EXCAVATION AS SHOWN. PIPE IS TO LAY ON THE GROUND SURFACE WITH 2-INCHES OF TEMPORARY INSULATION (SAFETY). PROVIDE WARNING OF "WARNING - HOT STEAM UNDER PRESSURE". PROVIDE ANY ANCHORS AND GUIDES SHOWN WITH TEMPORARY STEEL CONNECTIONS AND CONCRETE BASE TO PREVENT PIPE BREAKS ONLY (SEE DIRECT BURY DETAILS).
- CLOSE APPROPRIATE SHUT-OFF VALVES IN MANHOLE OF TUNNEL TO ISOLATE MAIN LINES.
- TEMPORARY SHUT-OFF VALVES.
- NEW TEMPORARY CONNECTION FOR BYPASS.
- CUT EXISTING STEAM AND CONDENSATE MAINS. CAP AND CUT NEW BYPASS CONNECTIONS.
- USE CAUTION IN AREA OF EXISTING BURIED LIGHTING CIRCUIT. COORDINATE WITH ELECTRICAL CONTRACTOR.

Mechanical Sequence

- EXISTING STEAM AND CONDENSATE MAINS ARE TO REMAIN LIVE IN THE CONCRETE TUNNEL UNTIL SWITCH-OVER TO THE NEW STEAM AND CONDENSATE MAINS IN THE STEEL TUNNELS ARE COMPLETE.
- PROVIDE BYPASS PIPING AT GRADE FOR MANHOLES #3 AND #4 AS DETAILED.
- INSTALL NEW STEAM, PUMPED CONDENSATE AND GRAVITY CONDENSATE PIPING IN NORTH-SOUTH AND EAST-WEST STEEL UTILITY TUNNELS AND MANHOLES #1 THROUGH #5. MODIFY EXISTING CONDENSATE PUMP PIPING IN MANHOLE #3. INSTALL NEW CONDENSATE PUMP IN MANHOLE #5.
- MAKE BRANCH CONNECTION TO EXISTING PIPING SERVING LIBRARY IN MANHOLE #2.
- MAKE CONNECTION TO EXISTING STEAM AND CONDENSATE MAINS SERVING THE MUSIC AND FINE ARTS BUILDINGS AT MANHOLE #3.
- MAKE BRANCH CONNECTION TO EXISTING PIPING SERVING THE GEARY THEATER AT MANHOLE #4.
- MAKE CONNECTION TO THE EXISTING STEAM AND CONDENSATE MAINS SERVING THE REEVES AND SAC BUILDINGS AT MANHOLE #5.
- SWITCH-OVER FROM THE EXISTING STEAM AND CONDENSATE MAINS IN THE AREA OF MANHOLE #1 TO THE NEWLY INSTALLED SYSTEM IN THE STEEL UTILITY TUNNELS.
- DEMOLISH TEMPORARY BYPASS LOOPS AT GRADE.
- DEMOLISH EXISTING STEAM AND CONDENSATE PIPING IN THE UTILITY TUNNEL TO BE ABANDONED.

General Notes

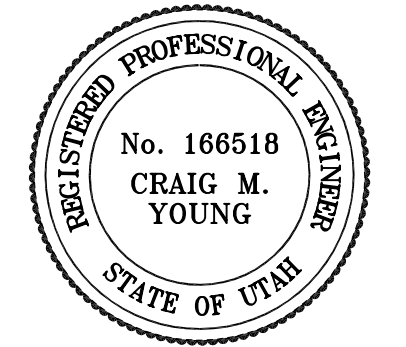
- CONTRACTOR TO FIELD VERIFY AND ADJUST AS NECESSARY FOR EXISTING CONDITIONS.
- COORDINATE ALL DEMOLITION OF PIPING AND EQUIPMENT WITH OTHER DISCIPLINES AND SEQUENCE WITH NEW CONSTRUCTION AS INDICATED IN THE DRAWINGS.



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COLLEGE OF EASTERN UTAH

PRICE, UTAH

CENTRAL TUNNEL
REPLACEMENT

STATE PROPERTY ID. #02061
DFCM PROJECT #03217610

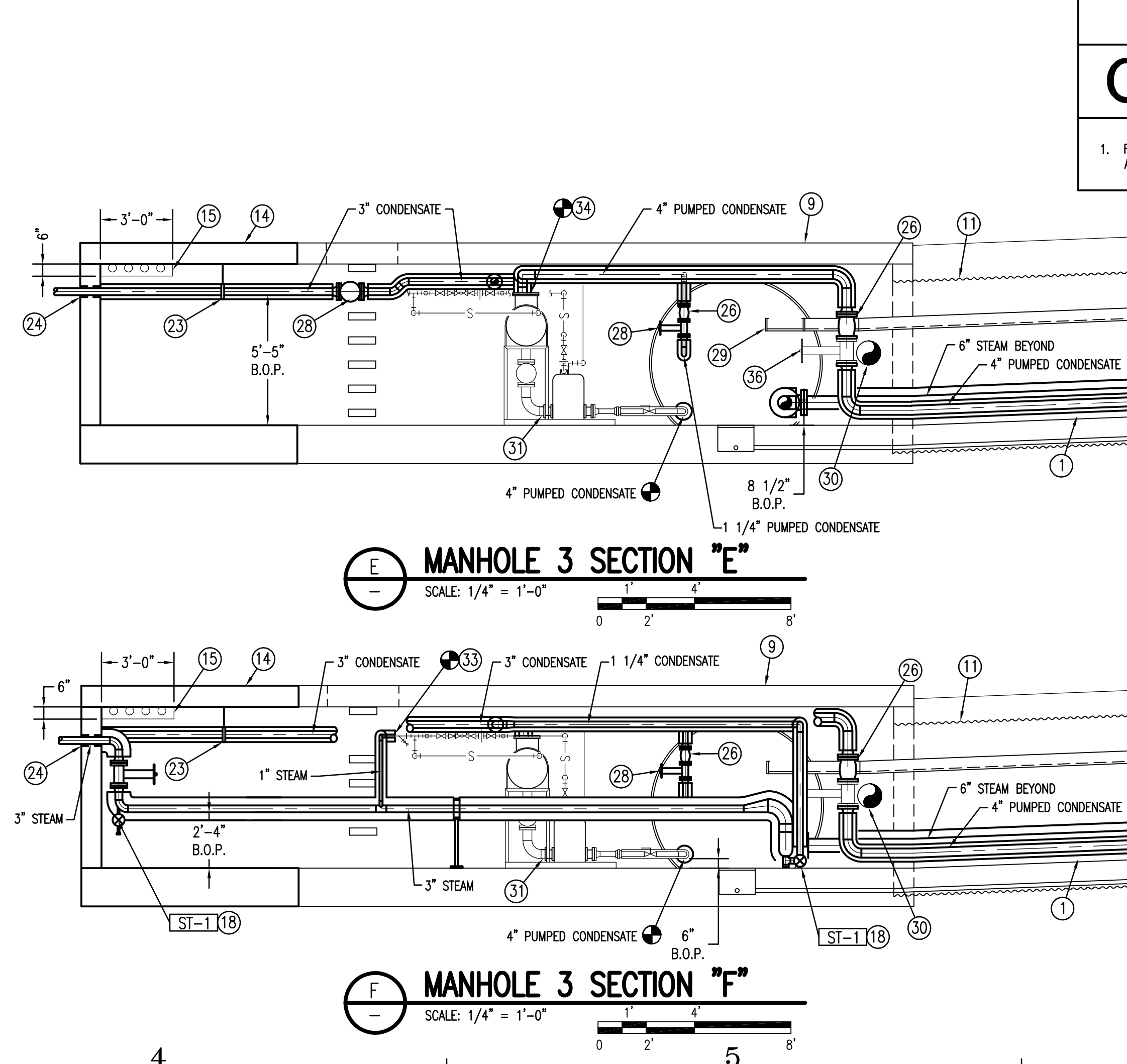
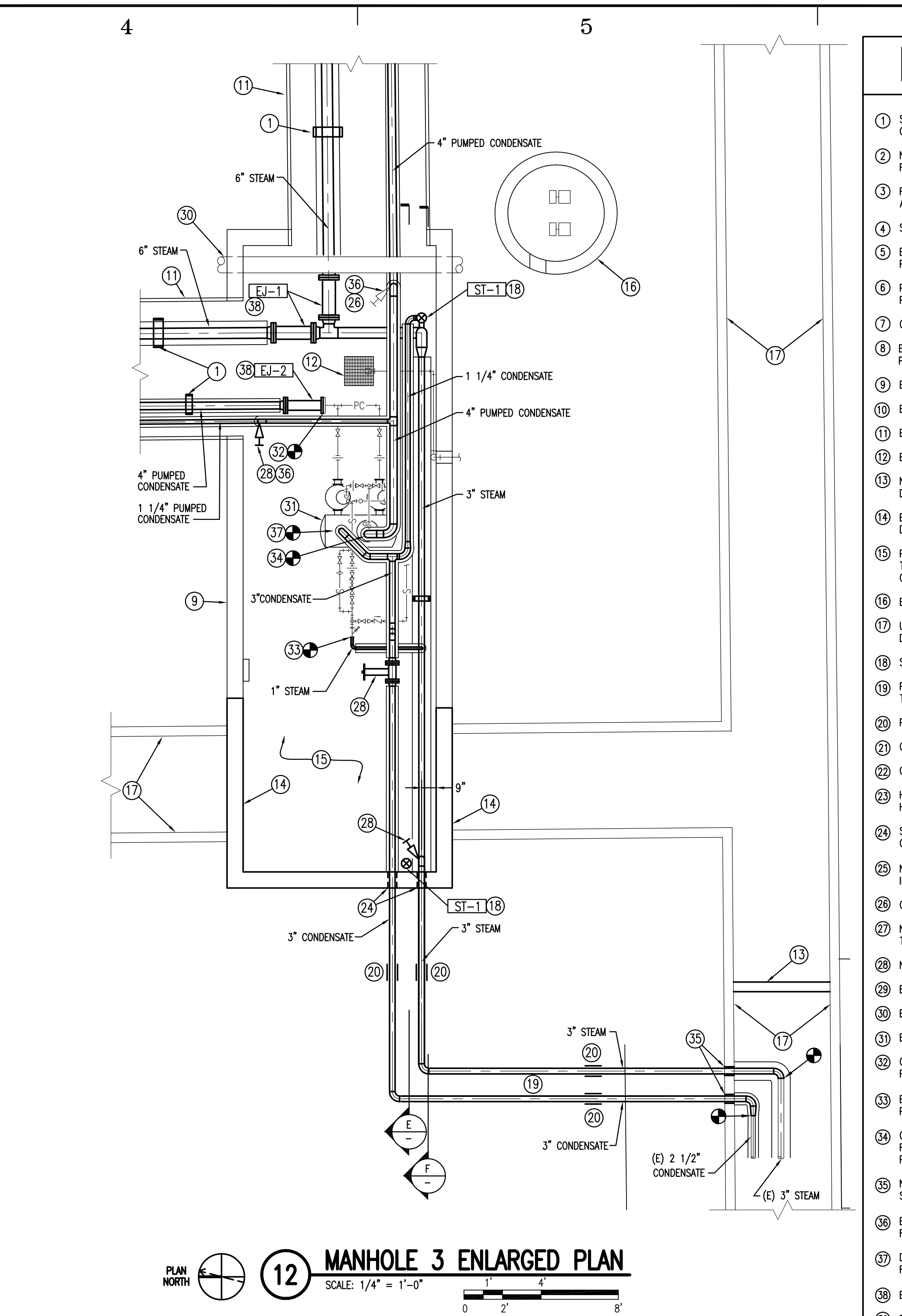
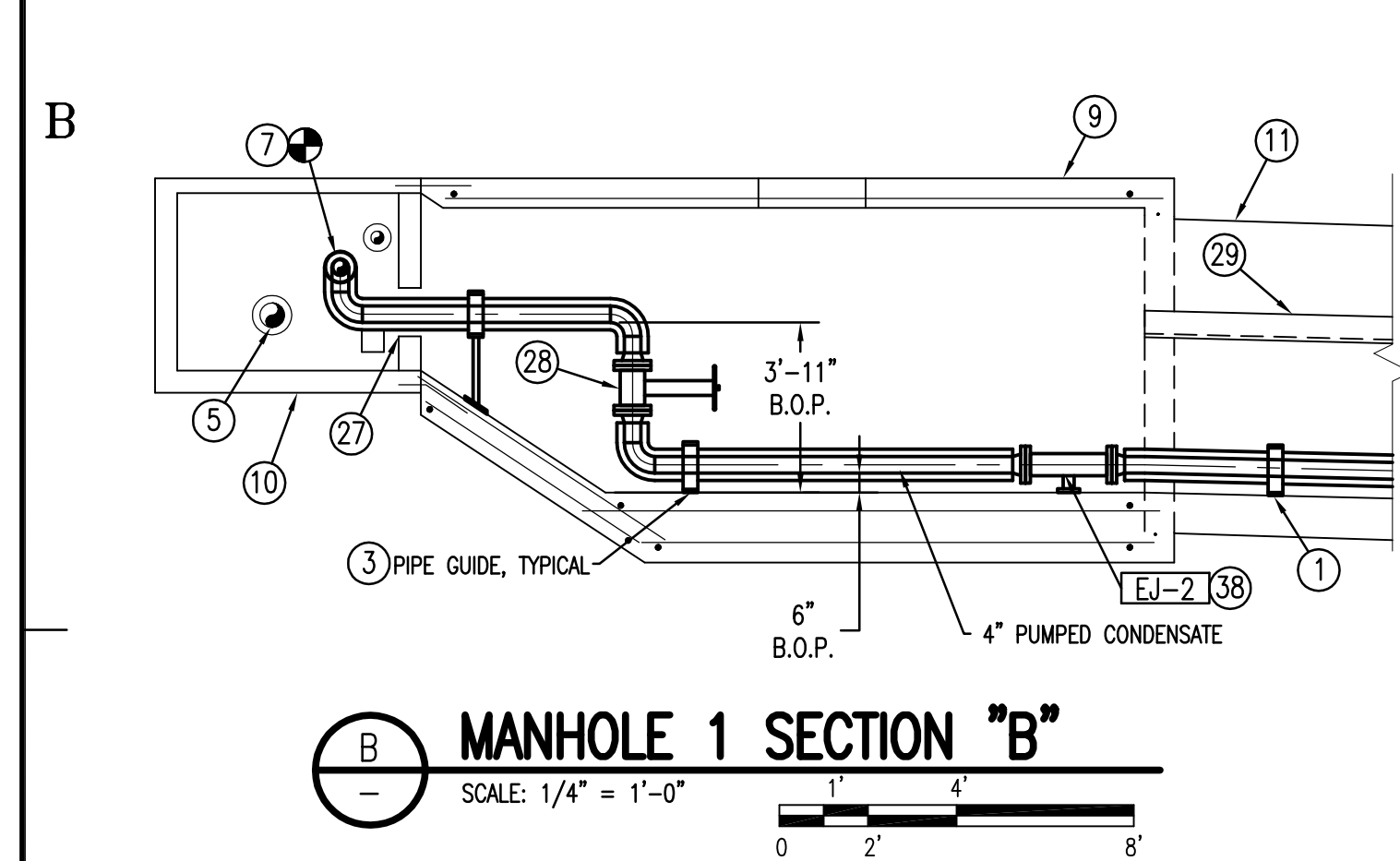
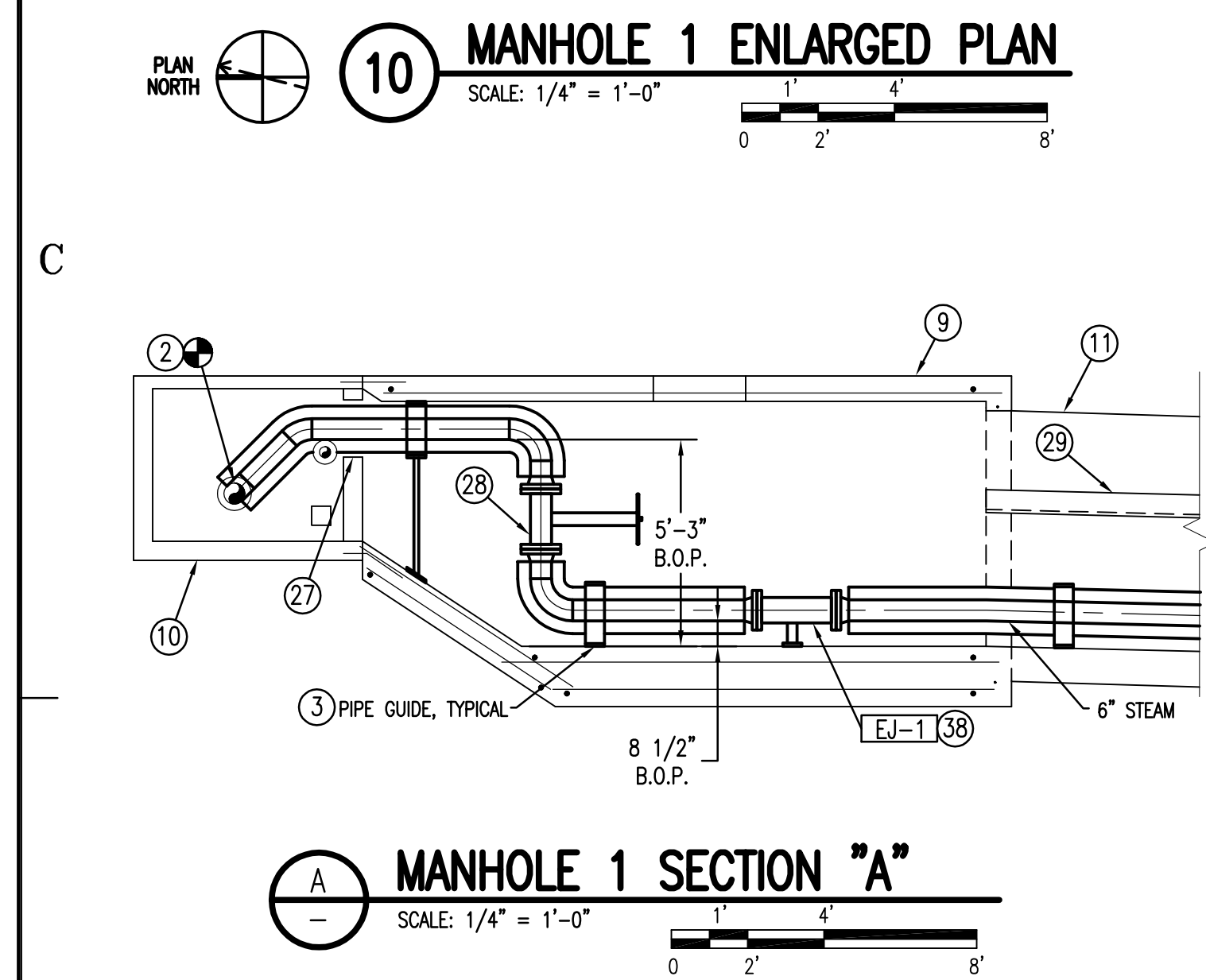
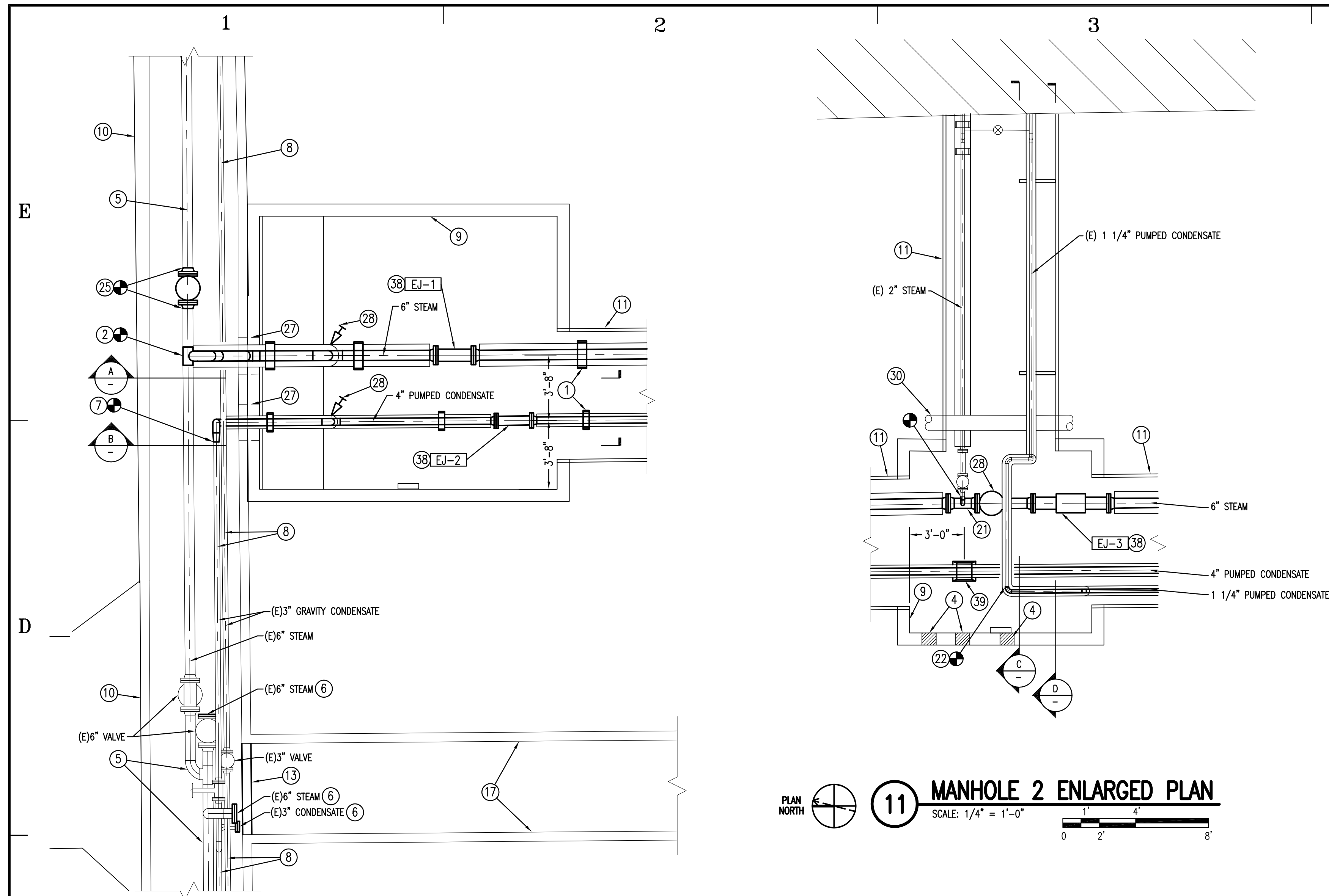
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1	05/05/23	PROJECT NO: 10-095
2		CAD DWG FILE: M-DP-103
3		DRAWN BY: KPN
4		CHECKED BY: RDT

SHEET TITLE

MECHANICAL
SEQUENCE & TEMPORARY
SERVICE PLAN

M-103

SHEET 12 OF 22



Keyed Notes

- SEE MECHANICAL PLANS ON SHEET M-102 FOR LOCATIONS OF ANCHORS AND GUIDES IN EXISTING STEEL UTILITY TUNNEL LOCATED BETWEEN MANHOLES.
- NEW CONNECTION AT EXISTING STEAM MAIN. ISOLATE MAIN AND CUT IN NEW FITTING AS SHOWN.
- REFER TO MECHANICAL DETAIL SHEET M-501 FOR SUPPORT, GUIDES AND OTHER ANCHOR DETAILS.
- SEAL EXISTING OPENING IN CONCRETE MANHOLE.
- EXISTING STEAM PIPING TO REMAIN. CONTRACTOR TO REPORT CONDITION OF PIPING TO OWNERS REPRESENTATIVE IN THE FIELD.
- PROVIDE BLIND FLANGE AT TAKEOFFS FOR EXISTING STEAM AND CONDENSATE PIPING AT TERMINATION OF DEMOLITION.
- CONNECT NEW CONDENSATE PIPING INTO EXISTING.
- EXISTING CONDENSATE PIPING TO REMAIN. CONTRACTOR TO REPORT CONDITION OF PIPING TO OWNERS REPRESENTATIVE IN THE FIELD.
- EXISTING CONCRETE UTILITY MANHOLE.
- EXISTING CONCRETE UTILITY TUNNEL.
- EXISTING STEEL UTILITY TUNNEL.
- EXISTING TUNNEL DOWATERING SUMP. SHOWN FOR REFERENCE ONLY.
- NEW CONCRETE WALL TO BE INSTALLED IN EXISTING TUNNEL. SEE STRUCTURAL DRAWINGS.
- EXISTING CONCRETE MANHOLE TO BE MODIFIED AND EXTENDED. SEE STRUCTURAL DRAWINGS.
- PROVIDE SPACE FOR ELECTRICAL CONDUIT TO BE INSTALLED AT UNDERSIDE OF THE MANHOLE CEILING. MECHANICAL CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL PIPING IN THIS AREA WITH ELECTRICAL DRAWINGS.
- EXISTING MANHOLE AND SUMP PUMPS. SHOWN FOR REFERENCE ONLY.
- UTILITY TUNNEL TO BE ABANDONED UNDER THIS CONTRACT. SEE STRUCTURAL DRAWINGS.
- STEAM TRAP. SEE DETAIL 9 ON SHEET M-501.
- PLACE DIRECT BURIED STEAM AND CONDENSATE PIPING IN LOOSE FILL INSULATION TRENCH. REFER TO DETAILS 5-7 ON SHEET M-501.
- PIPE GUIDES. SEE DETAIL 5 ON SHEET M-501.
- CONNECT EXISTING STEAM BRANCH PIPING INTO NEW STEAM MAIN.
- CONNECT EXISTING CONDENSATE PIPING INTO EXISTING.
- HANG UPPER CONDENSATE PIPE FROM CEILING IN MANHOLE AREA. SEE PIPE HANGER DETAIL 3 ON M-501.
- SLEEVE CAST IN PLACE FOR PIPING. COORDINATE WITH STRUCTURAL. SEE DETAIL ON SHEET M-501 FOR PIPE SEAL.
- NEW 6" STEAM VALVE WITH NON-RISING STEM AND INDICATING POST TO BE CUT INTO EXISTING STEAM PIPING. THIS VALVE ONLY.
- CHECK VALVE. SEE SPECIFICATIONS.
- NEW OPENING BETWEEN TUNNEL AND MANHOLE. COORDINATE EXACT LOCATION IN THE FIELD. SEE STRUCTURAL DRAWINGS.
- NEW VALVE, TYPICAL. SEE SPECIFICATIONS.
- EXISTING ELECTRICAL CABLE TRAY. SHOWN FOR REFERENCE ONLY.
- EXISTING STORM DRAIN PIPE. SHOWN FOR REFERENCE ONLY.
- EXISTING CONDENSATE PUMP.
- CONNECT NEW PUMPED CONDENSATE PIPING TO EXISTING PUMPED DISCHARGE PIPING FROM CONDENSATE PUMP.
- EXTEND AND CONNECT NEW 1" STEAM PIPING INTO EXISTING 1" MOTIVE STEAM PIPE.
- CONNECT NEW PUMPED CONDENSATE PIPE TO EXISTING CONDENSATE PUMP RECEIVER TANK. OFFSET AT FLANGED CONNECTION TO CLEAR EXISTING VENT PIPING.
- NEW OPENING INTO EXISTING CONCRETE UTILITY TUNNEL. COORDINATE WITH STRUCTURAL. SEE DETAIL 1 ON SHEET M-501 FOR PIPE SEAL.
- EXISTING 4" VALVE SALVAGED FROM CONDENSATE PIPE DEMOLITION TO BE REUSED IN THIS LOCATION.
- DROP CONDENSATE PIPING TO FLANGED CONNECTION AT CONDENSATE PUMP RECEIVER TANK.
- EXPANSION JOINT. SEE DETAIL 10 ON SHEET M-501. (TYPICAL)
- PIPE ANCHOR. SEE DETAIL 13 ON SHEET M-501.

General Notes

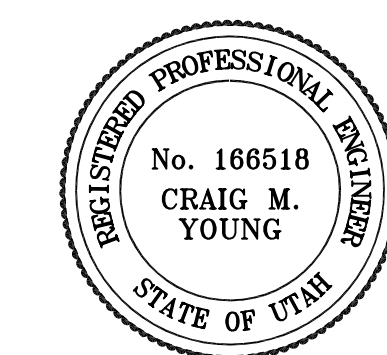
- REFER TO PIPE GUIDE SCHEDULE ON SHEET M-501 FOR TYPICAL GUIDES ASSOCIATED WITH PIPE SIZING.



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COLLEGE OF EASTERN UTAH

PRICE, UTAH

CENTRAL TUNNEL
REPLACEMENT

STATE PROPERTY ID. #02061
DFCM PROJECT #03217610

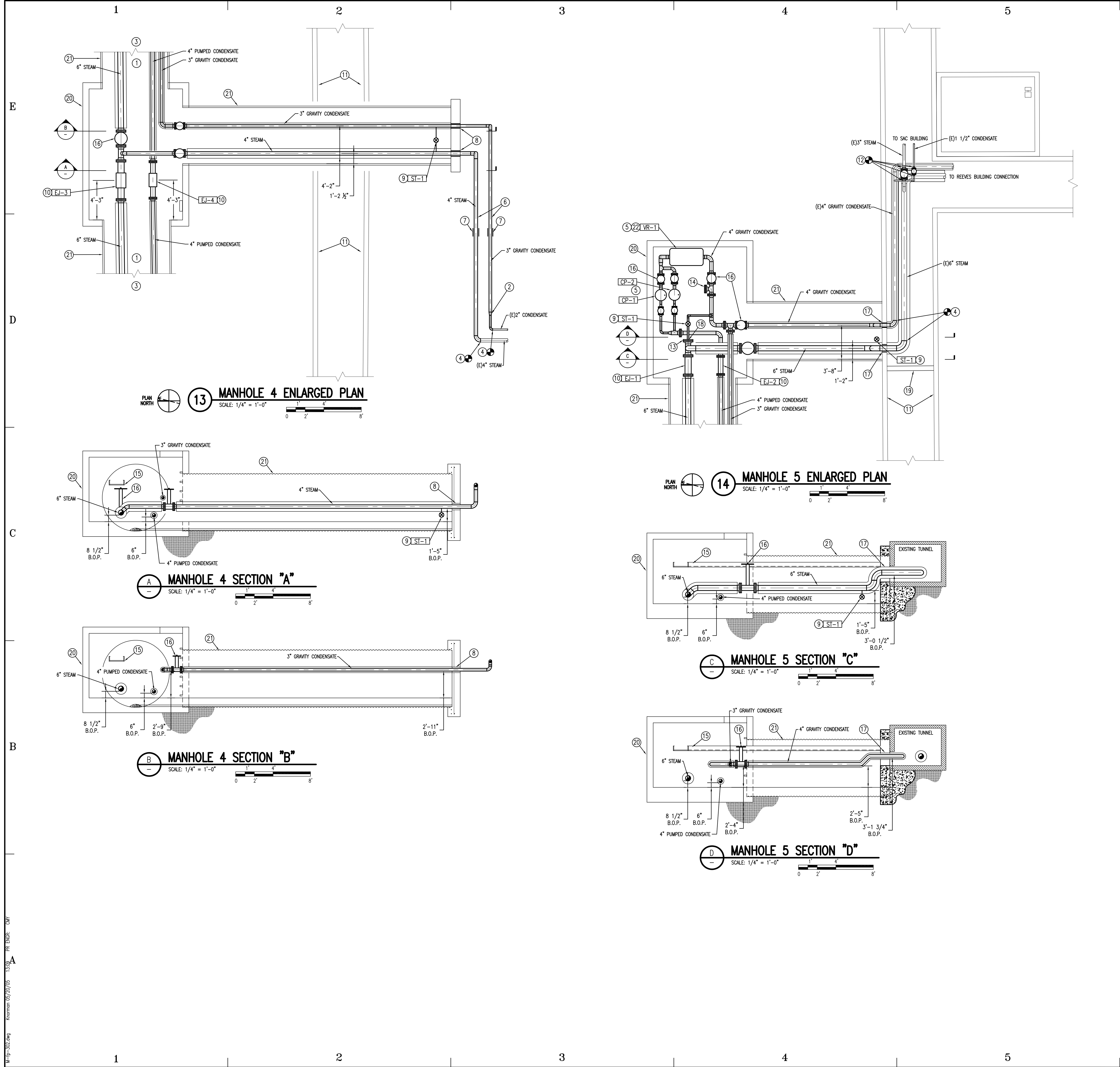
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SHEET TITLE

MH-1 THRU MH-3
ENLARGED MANHOLE
PLANS AND SECTIONS

M-301
SHEET 13 OF 22

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Keyed Notes

1. SEE MECHANICAL PLANS ON SHEET M-102 FOR LOCATIONS OF ANCHORS AND GUIDES BETWEEN MANHOLES.
2. REDUCER IN PIPE, TYPICAL.
3. REFER TO MECHANICAL DETAIL SHEET M-501 FOR SUPPORT, GUIDES AND OTHER ANCHOR DETAILS.
4. CONNECT TO EXISTING PIPING AS SHOWN.
5. SEE CONDENSATE PUMP SCHEMATIC ON SHEET M-602.
6. PLACE DIRECT BURIED PIPING IN TRENCH WITH LOOSE FILL INSULATION. SEE DETAIL 5-7 ON SHEET M-501.
7. PIPE GUIDE, TYPICAL. SEE DETAIL 5 ON SHEET M-501.
8. MECHANICAL SEAL. SEE DETAIL 1 ON SHEET M-501.
9. STEAM TRAP. SEE DETAIL 9 ON SHEET M-501.
10. EXPANSION JOINT. SEE DETAIL 10 ON SHEET M-501.
11. UTILITY TUNNEL TO BE ABANDONED UNDER THIS CONTRACT.
12. NEW STEAM AND CONDENSATE VALVES FOR SHUTOFF TO SAC BUILDING. CUT INTO EXISTING PIPE WITH NEW WELD NECK FLANGES. PROVIDE NON-RISING STEMS ON THESE VALVES ONLY.
13. PROVIDE 6" BLIND FLANGE IN STEAM PIPING FOR FUTURE CONNECTION.
14. PROVIDE 4" BLIND FLANGE IN CONDENSATE PIPING FOR FUTURE CONNECTION.
15. ELECTRICAL CABLE TRAY. SHOWN FOR REFERENCE ONLY.
16. VALVE, TYPICAL. SEE SPECIFICATIONS.
17. NEW OPENING IN WALL OF CONCRETE TUNNEL. COORDINATE EXACT LOCATION IN THE FIELD. SEE STRUCTURAL DRAWINGS.
18. EXTEND PIPING FROM BOTTOM OF BLIND FLANGE TO STEAM TRAP. SEE DETAIL 1 ON SHEET M-602.
19. NEW CONCRETE WALL TO BE INSTALLED IN EXISTING TUNNEL. SEE STRUCTURAL DRAWINGS.
20. EXISTING CONCRETE UTILITY MANHOLE.
21. EXISTING STEEL UTILITY TUNNEL.
22. VENTED RECEIVER TANK. SEE SCHEDULE.

General Notes

1. REFER TO PIPE GUIDE SCHEDULE ON SHEET M-601 FOR TYPICAL GUIDES ASSOCIATED WITH PIPE SIZING.

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CENTRAL TUNNEL REPLACEMENT

STATE PROPERTY ID. #02061
DFCM PROJECT #03217610

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0	05/23/05	ISSUED FOR CONSTRUCTION
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PROJECT NO: 10-095		
CAD DWG FILE: m-fp-302		
DRAWN BY: KPN		
CHECKED BY: RDT		

SHEET TITLE

MH-4 AND MH-5
ENLARGED MANHOLE
PLANS AND SECTIONS

M-302
SHEET 14 OF 22

E

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B

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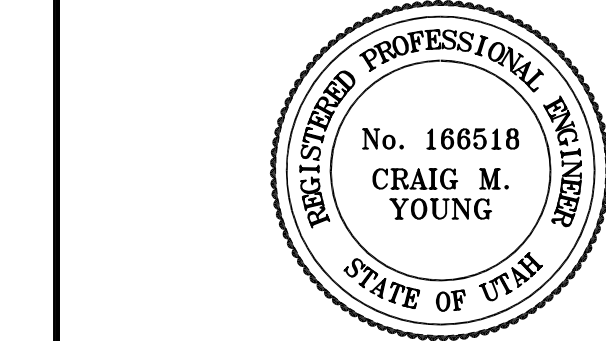
NON ELECTRIC CONDENSATE PUMP SCHEDULE (CP)									SPECIFICATION SECTION 15186
SYMBOL	MANUFACTURER AND MODEL NO.	LOCATION	CAPACITY (LB/HR) ①	INSTANTANEOUS FLOW (GPM)	CYCLE DISCHARGE (GAL)	MIN. DIFF. PRESS (PSI)	MAX. DIFF. ②	SIZE	REMARKS
CP-1	SPIRAX-SARCO PPC 3X2	MANHOLE #5	10,800	90	7.1	50"	60"	3"x2"	PUMP EQUIPPED WITH STAINLESS STEEL CHECK VALVES
CP-2	SPIRAX-SARCO PPC 3X2	MANHOLE #5	10,800	90	7.1	50"	60"	3"x2"	PUMP EQUIPPED WITH STAINLESS STEEL CHECK VALVES
① CAPACITY BASED ON MIN. DIFF. PRESS. LISTED									
② MAX. INLET PRESS., ZERO BACK PRESS. ON OUTLET									

STEAM TRAP SCHEDULE (ST)							SPECIFICATION SECTION 15182
TRAP NO.	CAPACITY (LB/HR) ①	MIN. DIFF. PRESS. (PSI)	MAX. DIFF. PRESS. (PSI) ②	TYPE ③	PIPE SIZE (IN.)	MANUFACTURER AND MODEL NO.	REMARKS
ST-1	190	30	60	F.T.	3/4"	SPIRAX-SARCO TD42L	
① CAPACITY BASED ON MIN. DIFF. PRESS. LISTED							
② MAX. INLET PRESS., ZERO BACK PRESS. ON OUTLET							
③ F.T. = CLOSED FLOAT & THERMOSTATIC							

VENTED RECEIVER TANK SCHEDULE (VR)							SPECIFICATION SECTION 15186
SYMBOL	LOCATION	SIZE "ØxL"	VOLUME (GAL)	VENT SIZE (IN)	INLET SIZE (IN)	OUTLET SIZE (IN)	REMARKS
VR-1	MANHOLE #5	22"x43"	70	1	4	4	VENDOR TO PROVIDE STAND FOR TANK

PIPE GUIDE SCHEDULE (G)				SPECIFICATION SECTION 15121
SYMBOL	MANUFACTURER AND MODEL NO.	NOM. PIPE SIZE (IN)	INSULATION THICKNESS (IN)	REMARKS
G-1	ADSCO 60E30	6	4	---
G-2	ADSCO 40E27	4	2	---
G-3	ADSCO 30E28	3	4	---
G-4	ADSCO 30E26	3	2	---
G-5	ADSCO 20E28	2	4	---
G-6	ADSCO 20E26	2	2	---
G-7	ADSCO 14E25	1-1/4	2	---

EXPANSION JOINT SCHEDULE (EJ)					SPECIFICATION SECTION 15121
SYMBOL	MANUFACTURER AND MODEL NO.	TYPE	TRANSVERSE LENGTH (IN)	SIZE (Ø-IN)	REMARKS
EJ-1	ADSCO TYPE RJ	300-LB FLANGED	4	6	SINGLE RAM PACK
EJ-2	ADSCO TYPE RJ	300-LB FLANGED	4	4	SINGLE RAM PACK
EJ-3	ADSCO TYPE RJ	300-LB FLANGED	4	6	DOUBLE RAM PACK
EJ-4	ADSCO TYPE RJ	300-LB FLANGED	4	4	DOUBLE RAM PACK



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0	05/23/05	ISSUED FOR CONSTRUCTION
MARK	DATE	DESCRIPTION
ISSUE DATE:		05/23/05
PROJECT NO:		10-095
CAD DWG FILE:		M-SC-601
DRAWN BY:		KPN
CHECKED BY:		RDT

SHEET TITLE
MECHANICAL SCHEDULES
M - 601 SHEET 16 OF 22

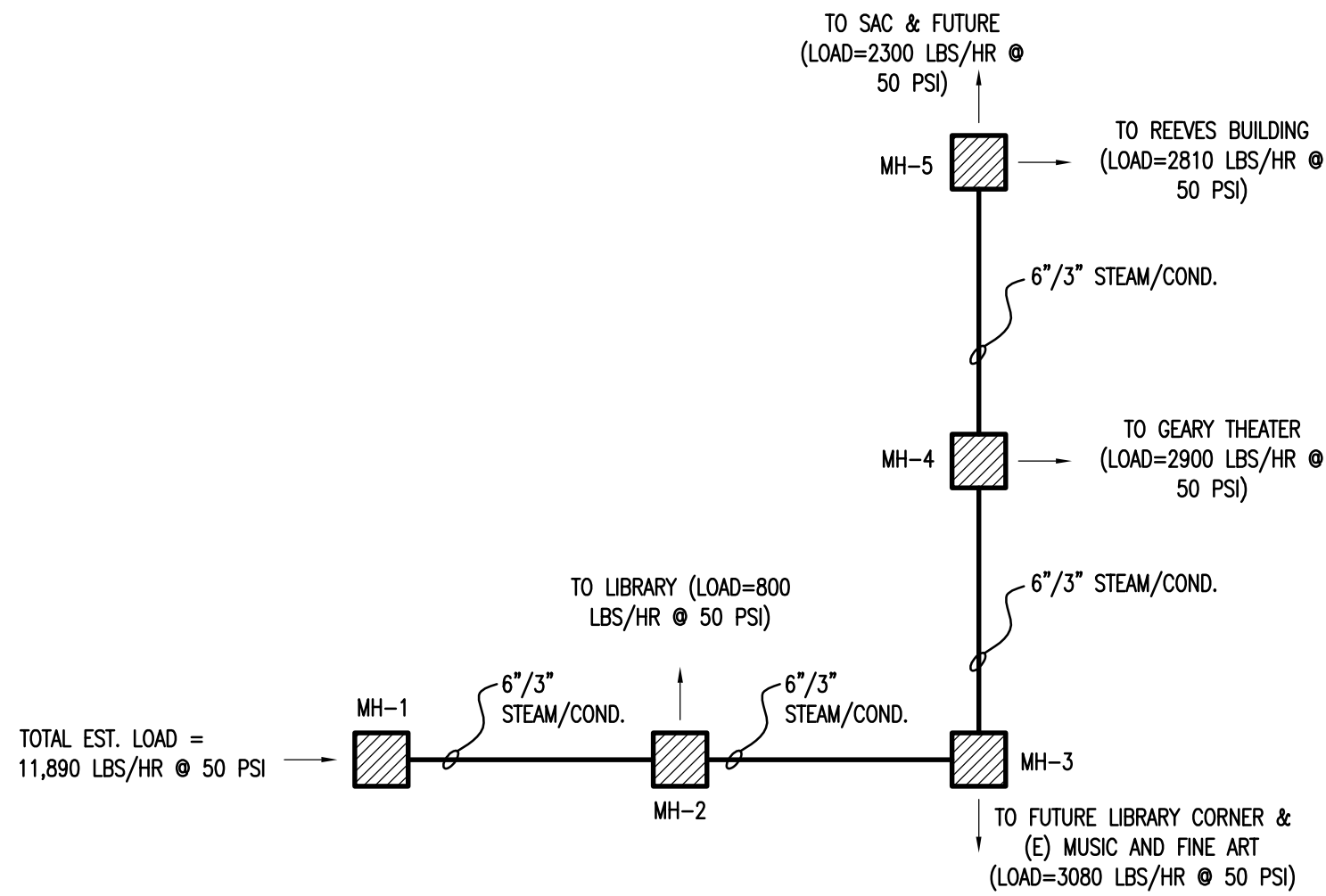
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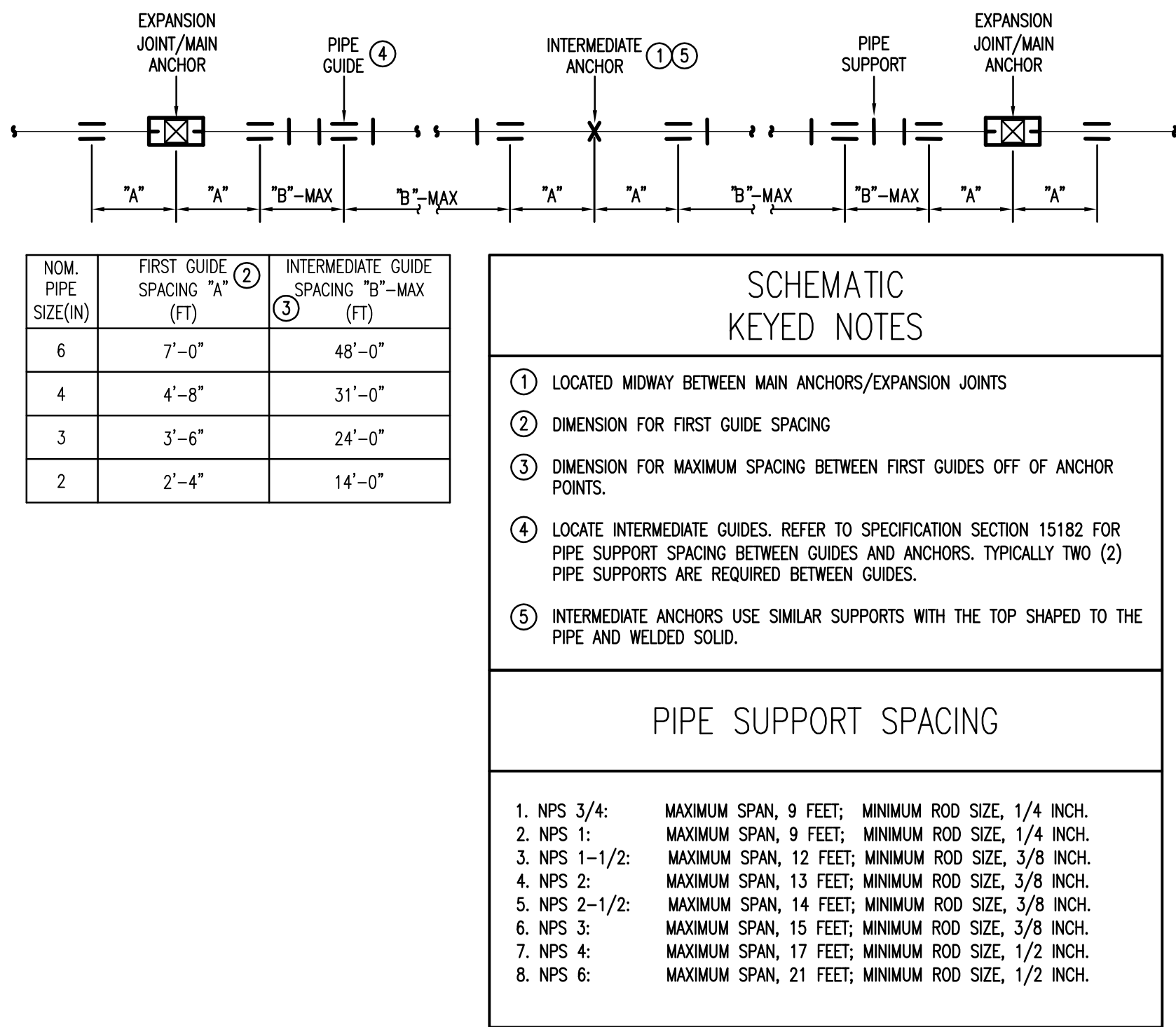
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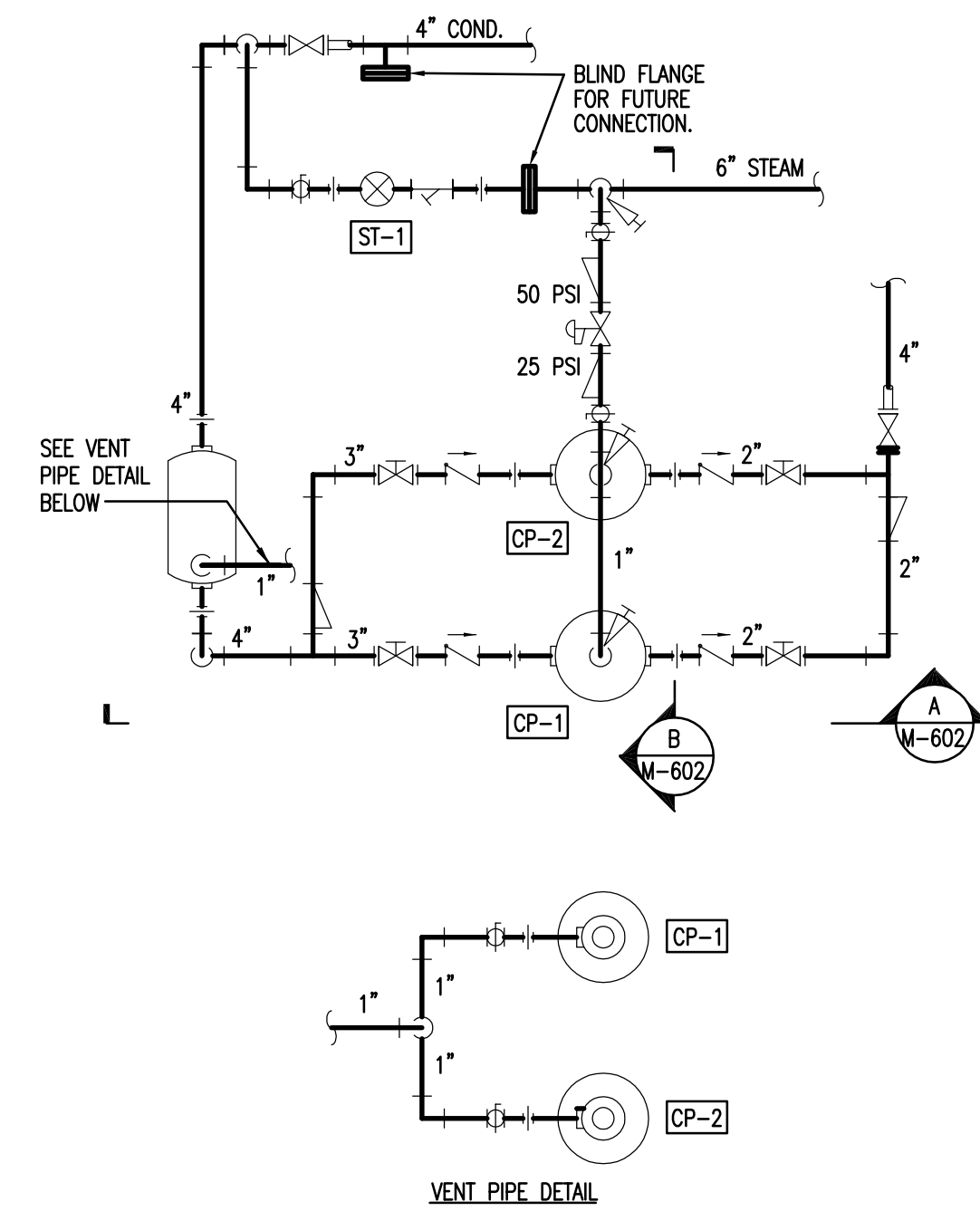
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PR: ENG: CMV



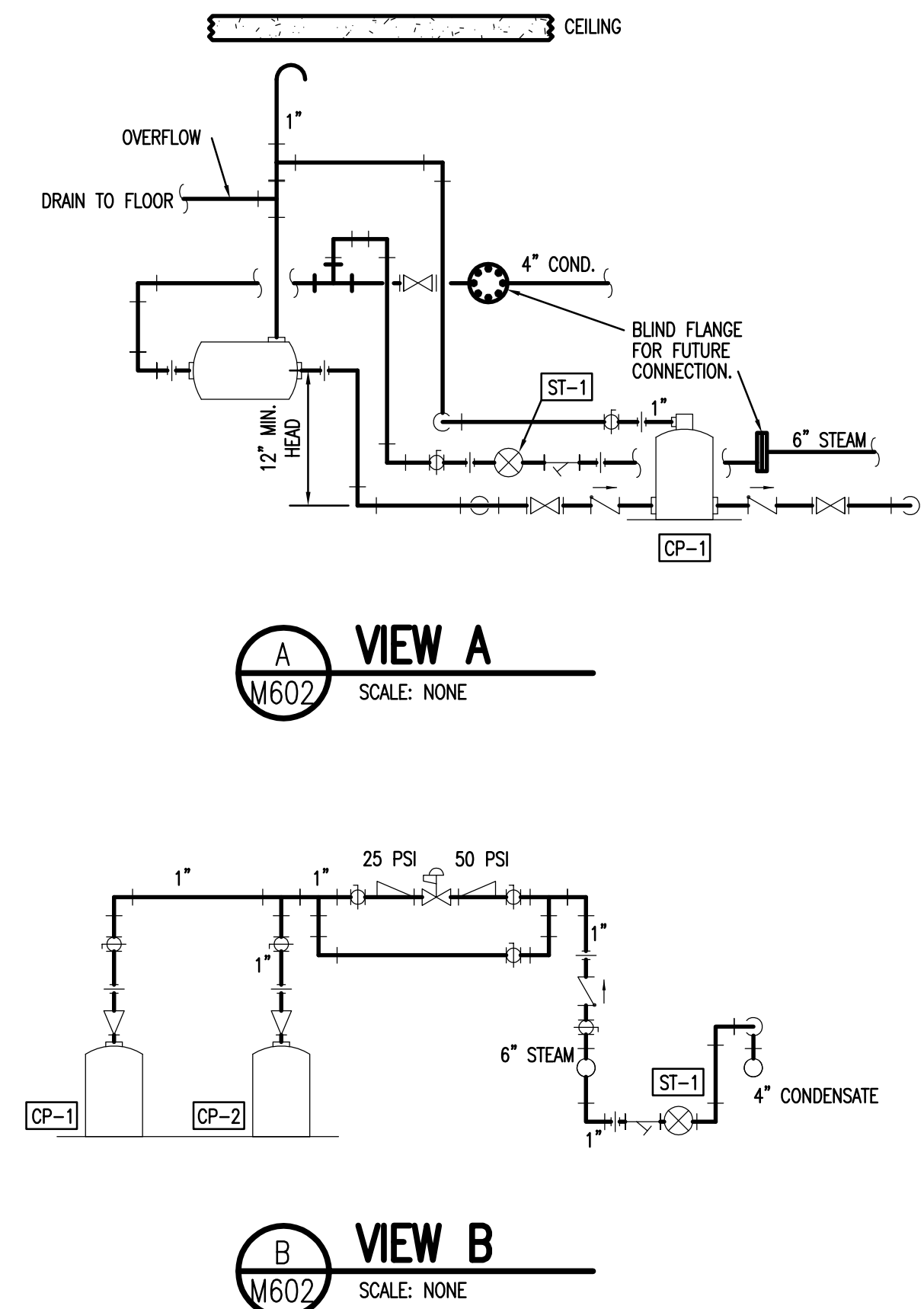
4 DESIGN LOAD SCHEMATIC
SCALE: NONE



5 ANCHOR, GUIDE AND SUPPORT SPACING SCHEMATIC
SCALE: NONE

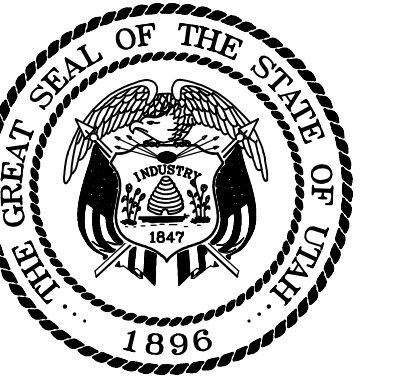


1 STEAM PUMP SCHEMATIC PLAN VIEW @ MANHOLE #5
SCALE: NONE



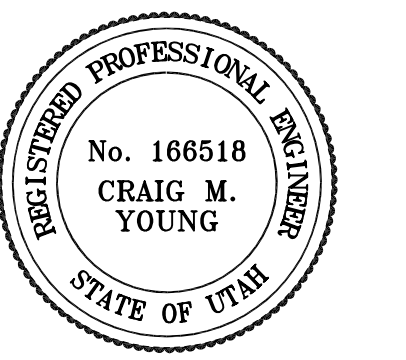
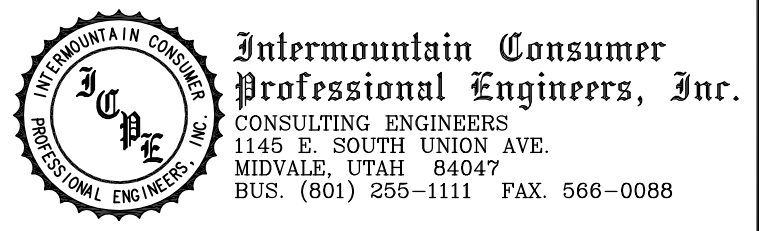
A VIEW A
SCALE: NONE

B VIEW B
SCALE: NONE



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CENTRAL TUNNEL
REPLACEMENT

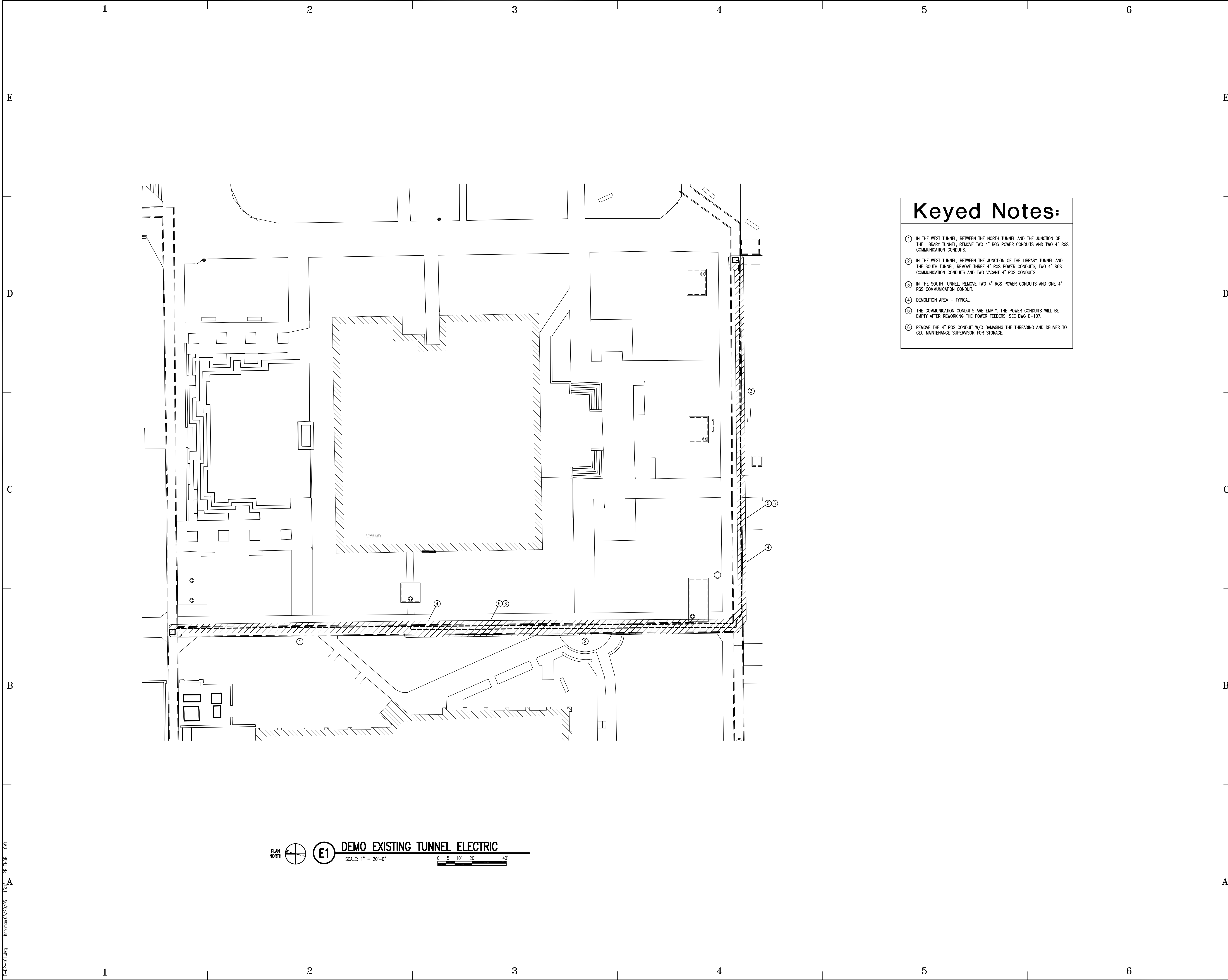
STATE PROPERTY ID. #02061
DFCM PROJECT #03217610

0	05/23/05	ISSUED FOR CONSTRUCTION
MARK	DATE	DESCRIPTION
ISSUE DATE:		05/23/05
PROJECT NO:		10-095
CAD DWG FILE:		M-SC-602
DRAWN BY:		KPN
CHECKED BY:		RDT

SHEET TITLE

MECHANICAL
SCHEMATICS

M-602
SHEET 17 OF 22




Keyed Notes:

- 1 IN THE WEST TUNNEL, BETWEEN THE NORTH TUNNEL AND THE JUNCTION OF THE LIBRARY TUNNEL, REMOVE TWO 4" RGS POWER CONDUITS AND TWO 4" RGS COMMUNICATION CONDUITS.
- 2 IN THE WEST TUNNEL, BETWEEN THE JUNCTION OF THE LIBRARY TUNNEL AND THE SOUTH TUNNEL, REMOVE THREE 4" RGS POWER CONDUITS, TWO 4" RGS COMMUNICATION CONDUITS AND TWO VACANT 4" RGS CONDUITS.
- 3 IN THE SOUTH TUNNEL, REMOVE TWO 4" RGS POWER CONDUITS AND ONE 4" RGS COMMUNICATION CONDUIT.
- 4 DEMOLITION AREA - TYPICAL.
- 5 THE COMMUNICATION CONDUITS ARE EMPTY. THE POWER CONDUITS WILL BE EMPTY AFTER REWORKING THE POWER FEEDERS. SEE DWG E-107.
- 6 REMOVE THE 4" RGS CONDUIT W/O DAMAGING THE THREADING AND DELIVER TO CEJ MAINTENANCE SUPERVISOR FOR STORAGE.


PLAN NORTH  **E1** DEMO EXISTING TUNNEL ELECTRIC
SCALE: 1" = 20'-0"


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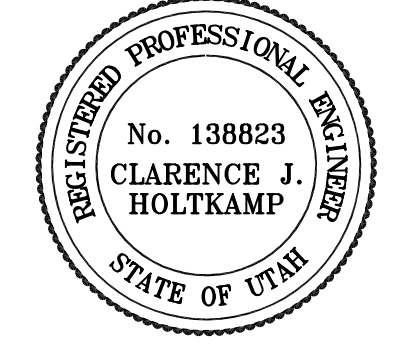


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COLLEGE OF EASTERN UTAH

PRICE, UTAH

CENTRAL TUNNEL REPLACEMENT

STATE PROPERTY ID. #02061
DPCM PROJECT #03217610

MARK	DATE	DESCRIPTION
0	05/23/05	ISSUED FOR CONSTRUCTION

ISSUE DATE: 05/23/05
PROJECT NO: 10-095
CAD DWG FILE: E-DP-101
DRAWN BY: KPN
CHECKED BY: CJH

SHEET TITLE

DEMO EXISTING TUNNEL ELECTRIC

E - 101
SHEET 18 OF 22



E1

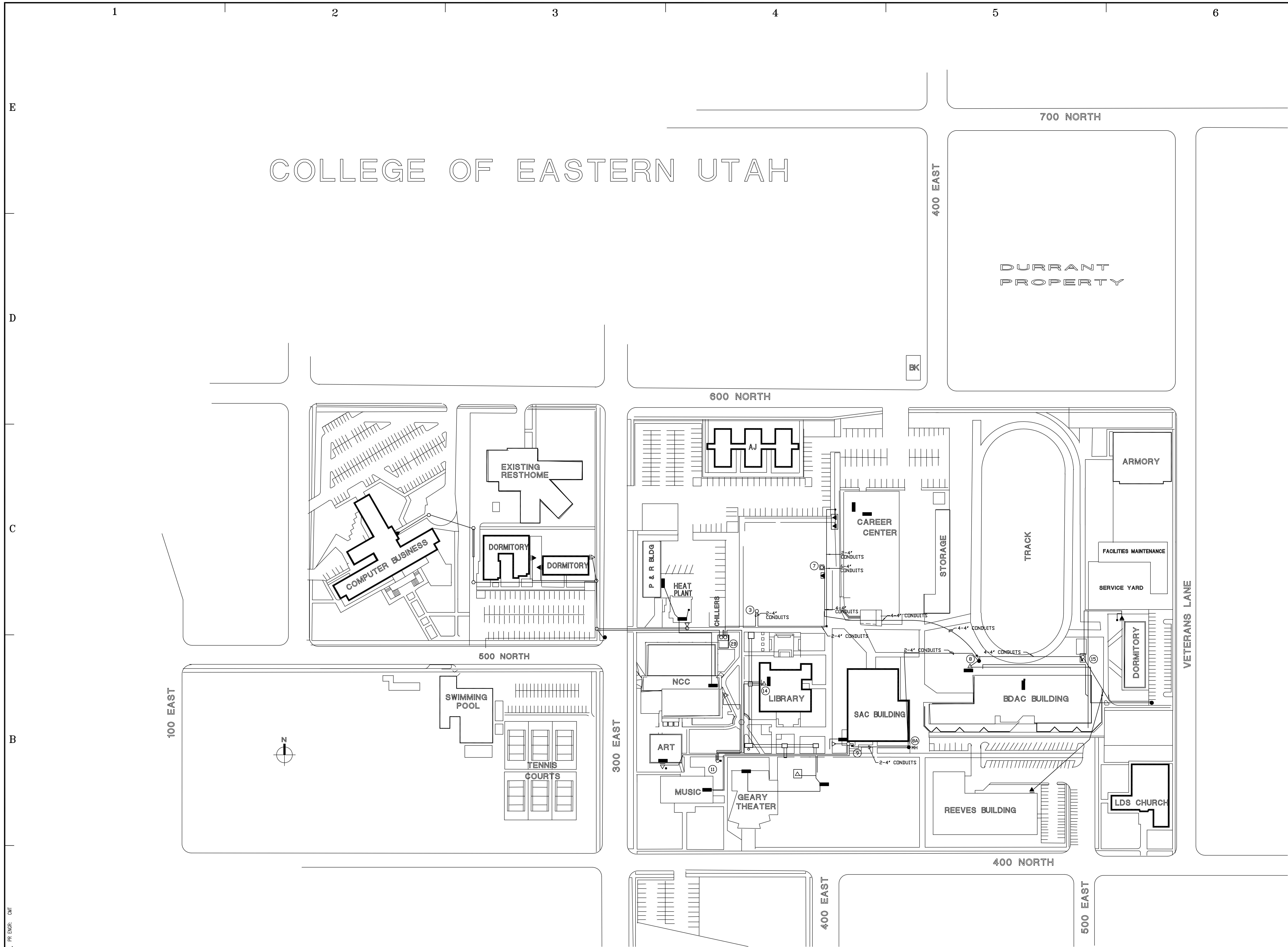
NOTES:

1. FEEDERS 1 & 3 ARE 4°C, 3-1/c, #4/0 COPPER CABLE, 15kV, 133% EPR INSULATION, PVC JACKET, TYPE MV-105, WITH #4/0 XHHW GROUND.
2. FEEDER 2 IS 4°C, 2-1/c, #2 COPPER CABLE, 15kV, 133% EPR INSULATION, PVC JACKET, TYPE MV-105, WITH #2 XHHW GROUND.
3. EXISTING TEMPORARY LIBRARY FEEDER IS TYPE MC ARMORED SHIELDED CABLE, 15kV, 3/c #2 W/GND, COPPER, 100% EPR INSULATION.

THERE ARE STILL SOME COMMUNICATION CABLES IN THE OLD TUNNEL THAT NEED TO BE RELOCATED TO THE NEW TUNNEL AND PULLED INTO THE STUDENT CENTER.

THERE ARE STILL SOME COMMUNICATION CABLES IN THE OLD TUNNEL THAT NEED TO BE RELOCATED TO THE NEW TUNNEL AND PULLED INTO THE STUDENT CENTER.

- E - 102
- SHEET 19 OF 22



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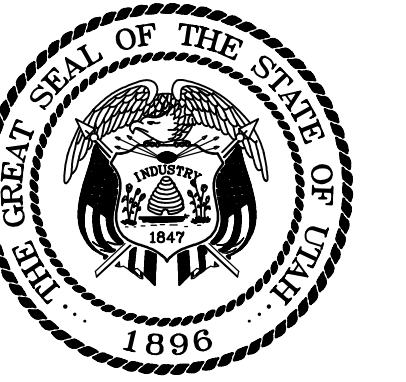


E3

12.5 kV DISTRIBUTION PLAN
SCALE: 1" = 100'-0"

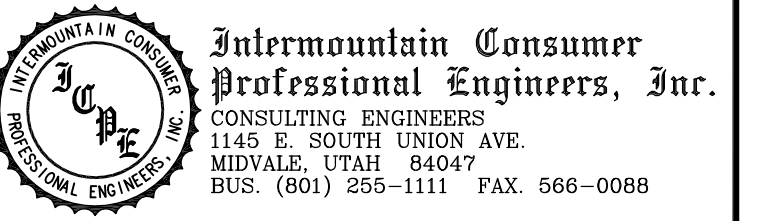


○ BUBBLES INDICATE SWITCH NUMBERS. SEE DRAWING E-601.

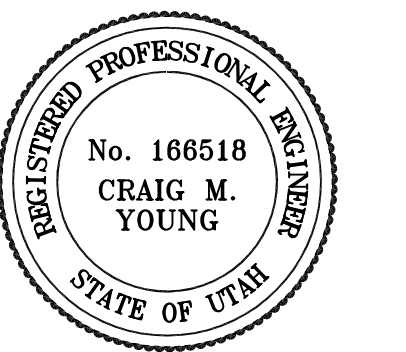


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CENTRAL TUNNEL
REPLACEMENT

STATE PROPERTY ID. #02061
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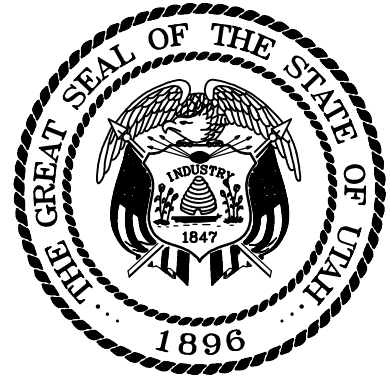
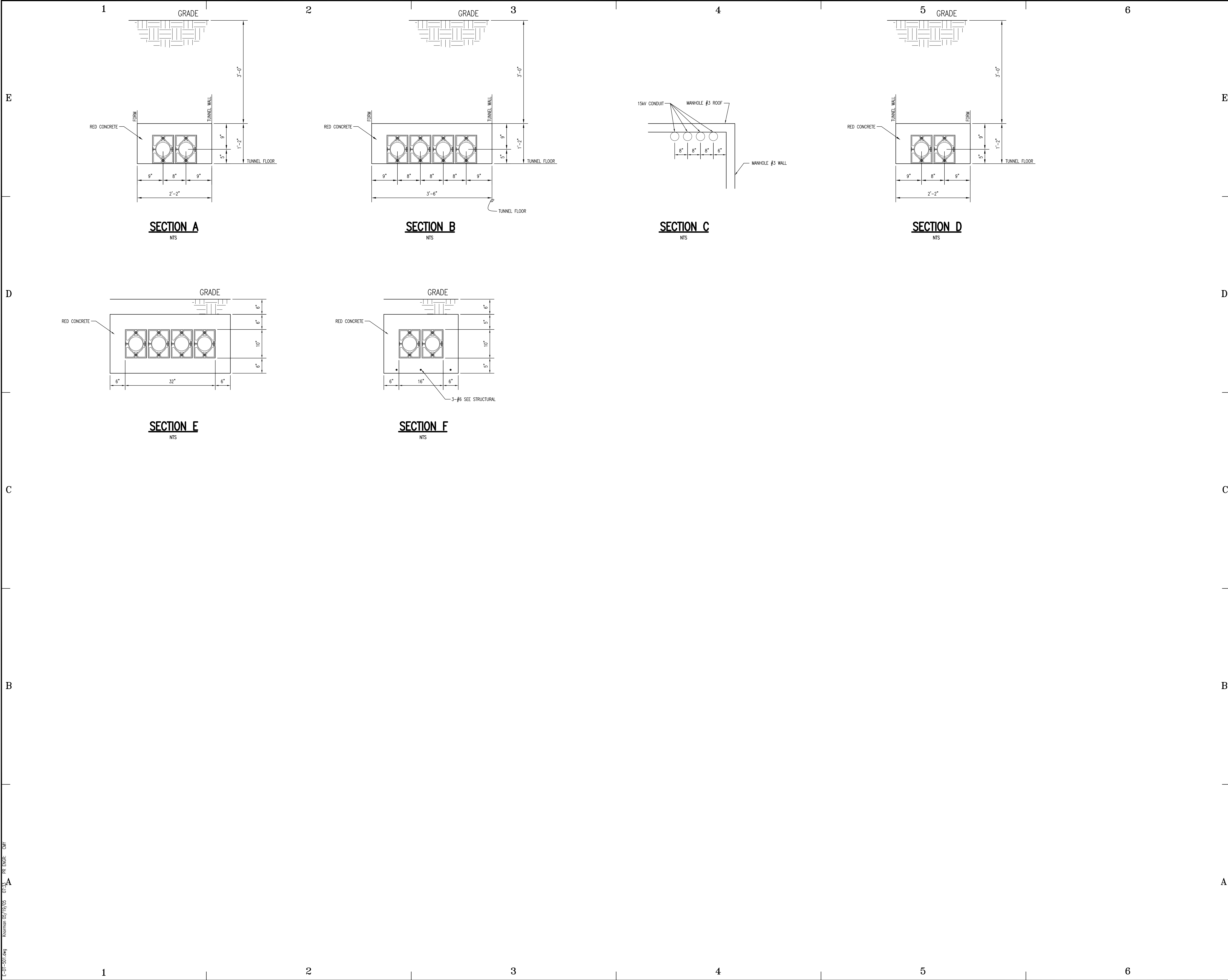
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MARK	DATE	DESCRIPTION
ISSUE DATE:		05/23/05
PROJECT NO:		10-095
CAD DWG FILE:		E-FP-103
DRAWN BY:		KPN
CHECKED BY:		CJH

SHEET TITLE

12.5kV DISTRIBUTION PLAN

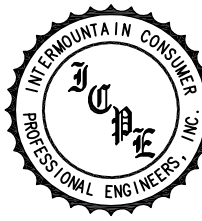
E - 103

SHEET 20 OF 22

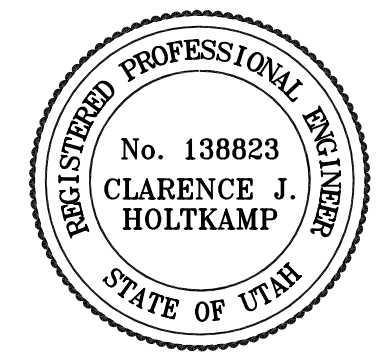


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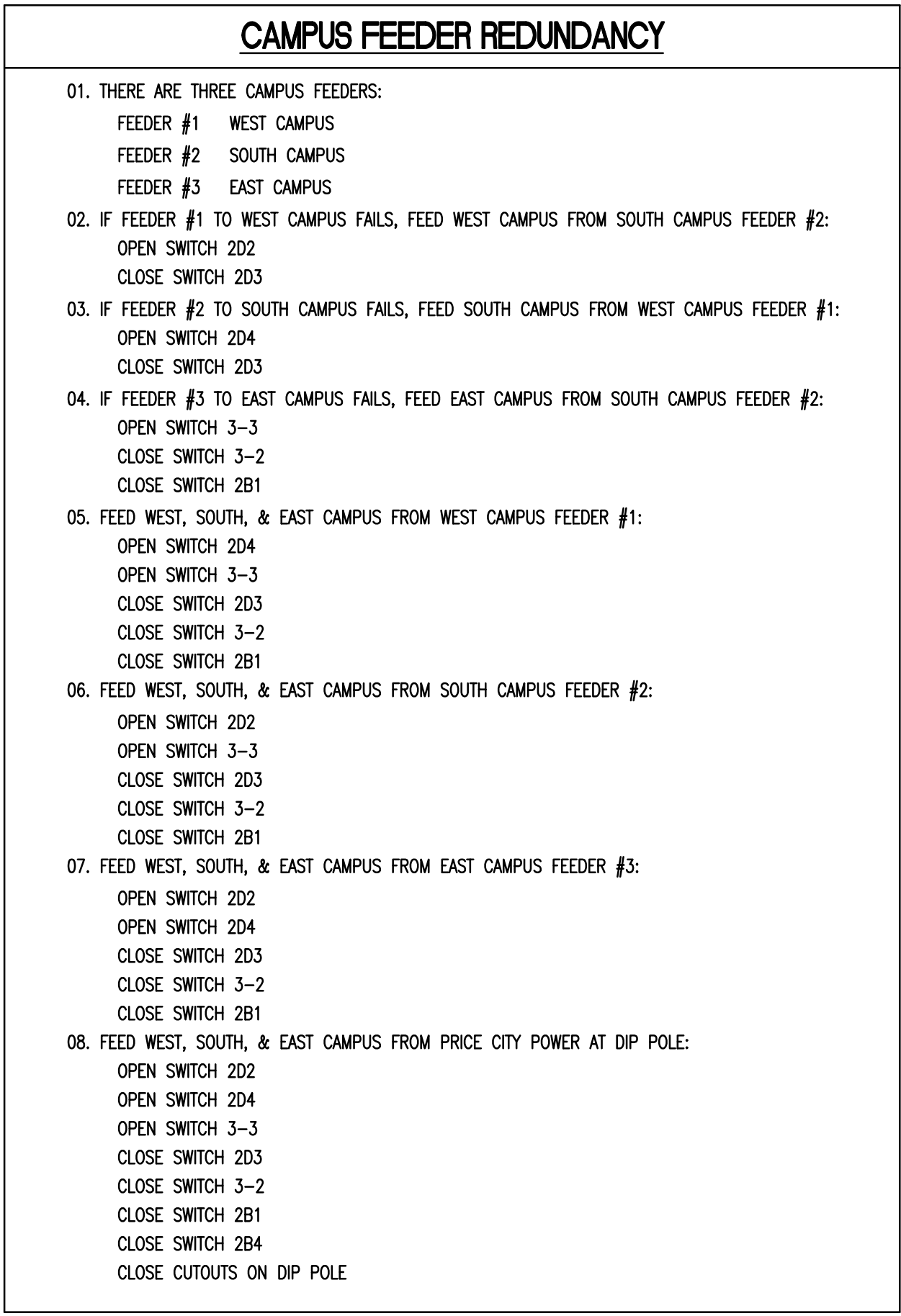
STATE PROPERTY ID. #02061
DFCM PROJECT #03217610

0	05/23/05	ISSUED FOR CONSTRUCTION
MARK	DATE	DESCRIPTION
ISSUE DATE: 05/23/05		
PROJECT NO: 10-095		
CAD DWG FILE: E-DT-501		
DRAWN BY: KPN		
CHECKED BY: CJH		

SHEET TITLE

ELECTRICAL
DETAILS AND SECTIONS

E-501
SHEET 21 OF 22



REPLACEMENT OF EXISTING FEEDERS

- ① REPLACE EX SCIENCE BUILDING FEEDER. 2B1 - 3-2
- ② REPLACE CAREER CENTER FEEDER. 3-1 - 7-2
- ③ REPLACE BDC FEEDER. 7-1 - 8-4
- ④ REPLACE EAST JUNCTION FEEDER. 8-1 - 15-2
- ⑤ REPLACE SAC TE FEEDER. 8-2 - 9-1
- ⑥ SWITCH 8-2 IS N. O.

THERE IS AN EXISTING SPARE 4" CONDUIT FOR EACH FEEDER.

- ⑦ EACH FEEDER WILL HAVE TO BE PULLED IN, AND TESTED, ONE AT A TIME; THEN THE EXISTING FEEDER DISCONNECTED AND THE NEW FEEDER CONNECTED IN IT-S PLACE.
 - A. EACH SWITCH:
 - A. PULL IN NEW CABLES THROUGH THE SPARE DUCT.
 - B. MAKE UP CABLES WITH TERMINATIONS ON BOTH ENDS.
 - C. PERFORM HI-POT TEST ON EACH CABLE.
 - D. OPEN SWITCHES.
 - E. DISCONNECT OLD CABLES FROM SWITCHES.
 - F. WATERPROOF THE EXPOSED ENDS OF OLD CABLES AND LEAVE IN A SAFE CONDITION IN SWITCH COMPARTMENT.
 - G. CONNECT NEW CABLES TO SWITCHES.
 - H. CLOSE SWITCHES.
- ⑧ EACH FEEDER SHALL BE 3 - 1/4" #4/0 STRANDED COPPER CONDUCTOR, 15 KV, 133K EPR INSULATION, COPPER TAP SHEILD, PVC JACKET, TYPE MV-105 AND #4/0 SHIM-2 COPPER GROUND.
- ⑨ SHUTDOWNS CAN BE KEPT TO A MINIMUM BY PROPER SCHEDULING. NO BUILDINGS WILL BE OUT OF SERVICE FOR MORE THAN A FEW MINUTES EXCEPT THE LIBRARY, DURING ITS OUTVOER.
- ⑩ KEEP THE MAINTENANCE SUPERVISOR INFORMED, AHEAD OF TIME, WHEN YOU HI-POT THE CABLES AND CUTOVERS. THE MAINTENANCE SUPERVISOR NEEDS TO WITNESS EACH HI-POT TEST AND KNOW YOUR CUTOVER PLANS.
- ⑪ THE SOUTH FEEDER, LIBRARY FEEDER, & SAC BUILDING FEEDER REPLACEMENTS ARE DEFINED ON DWG E-102.

CAMPUS DISTRIBUTION SYSTEM FEEDER CONNECTION DIAGRAM

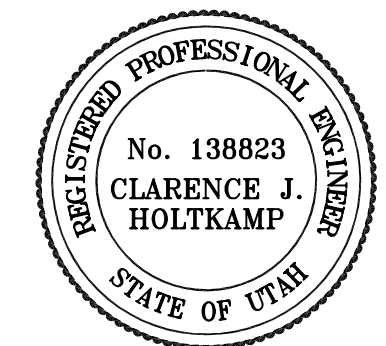


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DRAWN BY:	KPN	
CHECKED BY:	CJH	

SHEET TITLE

CAMPUS DISTRIBUTION SYSTEM FEEDER CONNECTION DIAGRAM

E - 601
SHEET 22 OF 22